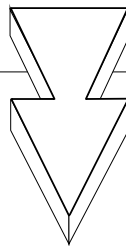
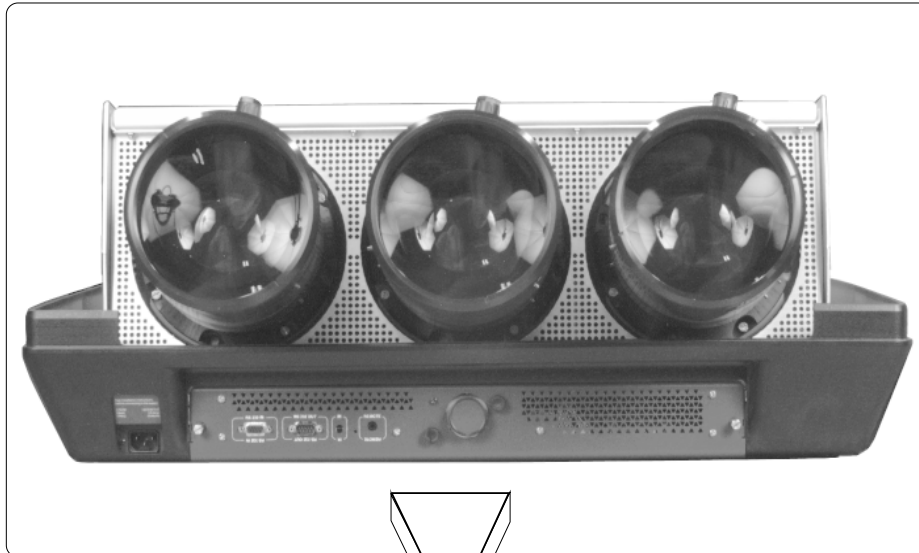




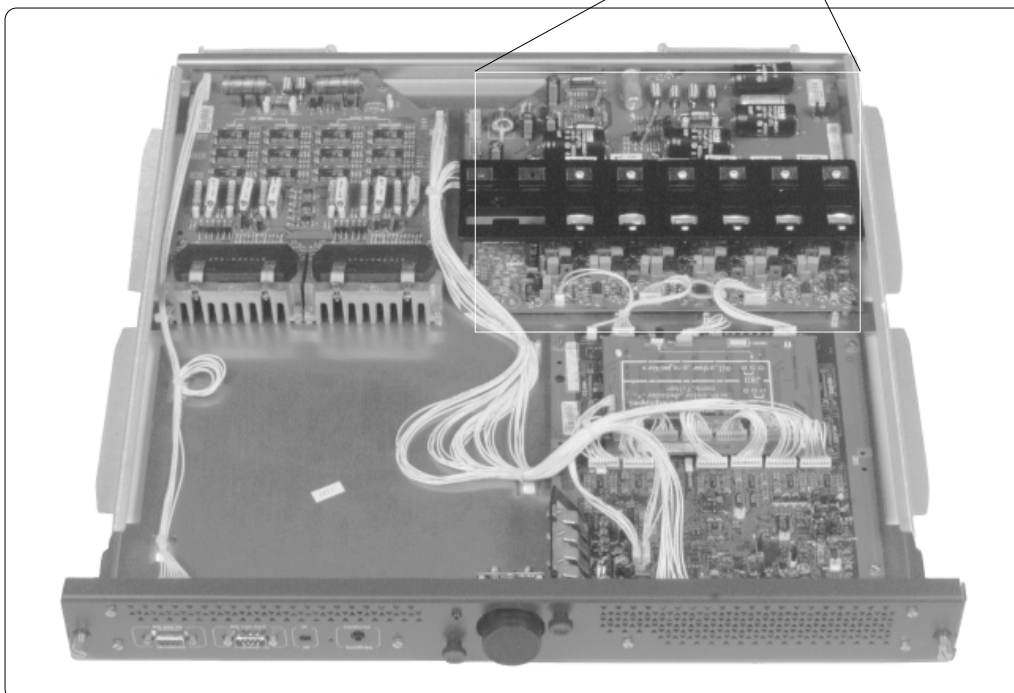
BARCO Projection Systems

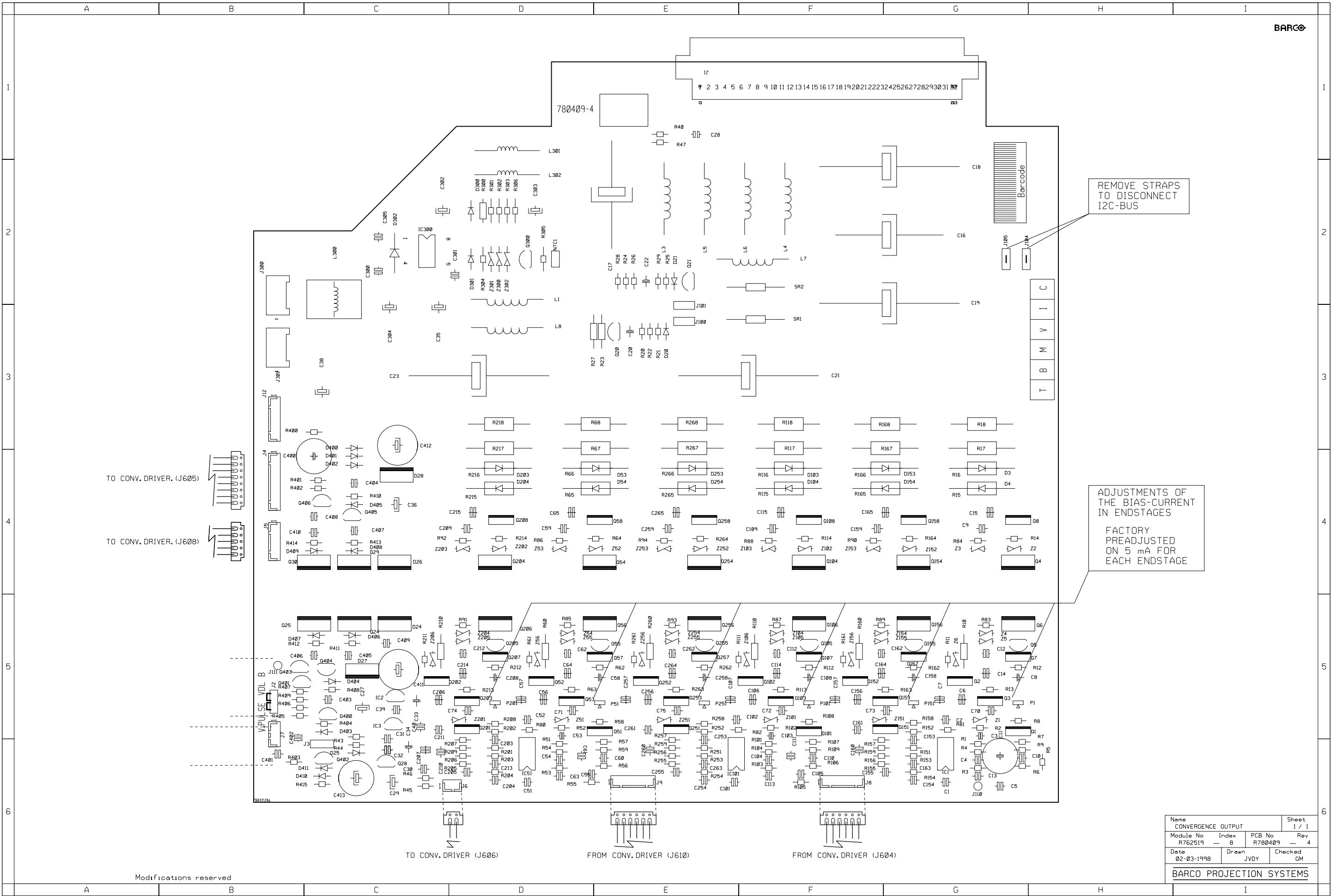
SECTION W

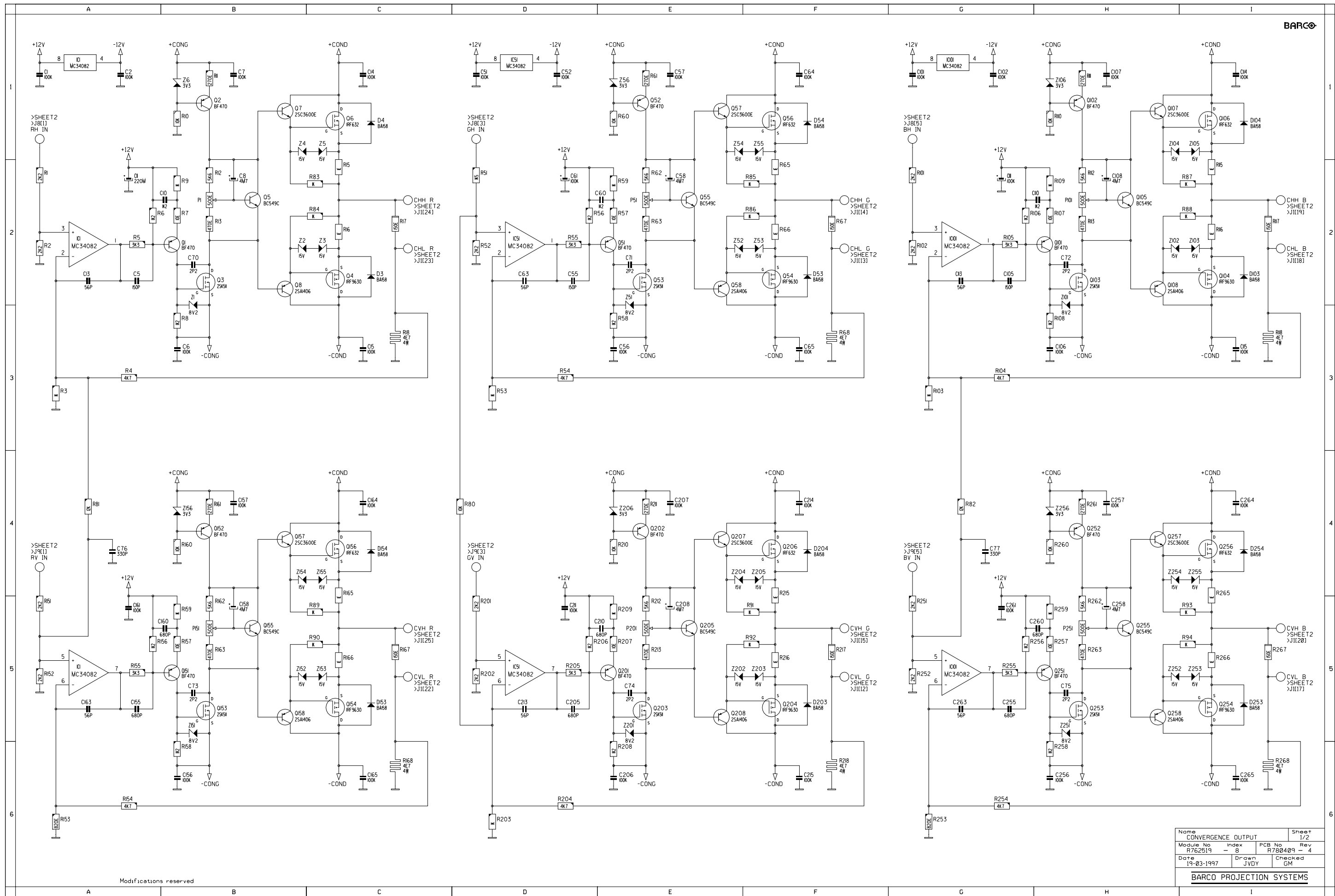
service sheet



Convergence Output
module R762519







CONVERGENCE OUTPUT

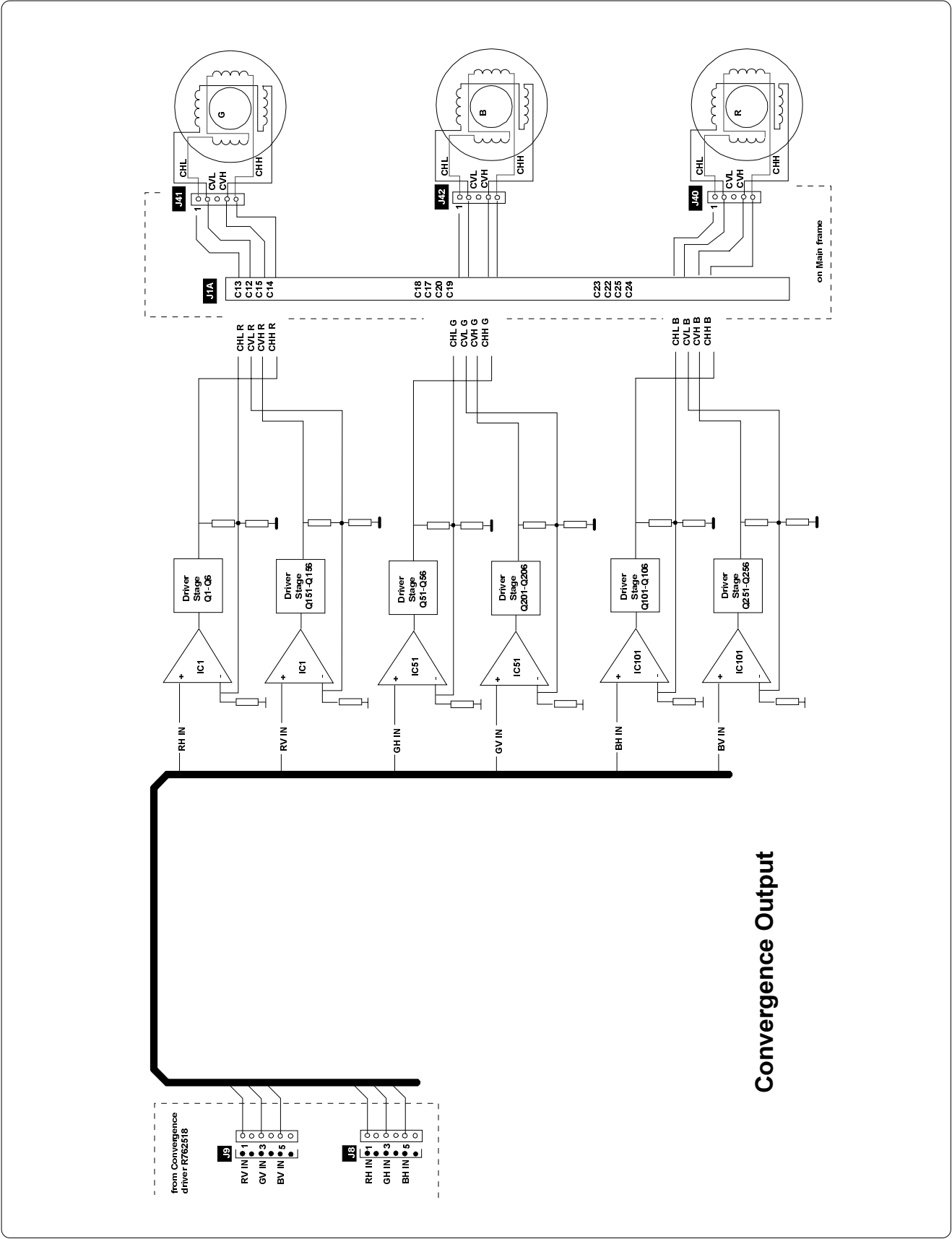
PRODUCT SAFETY NOTICE

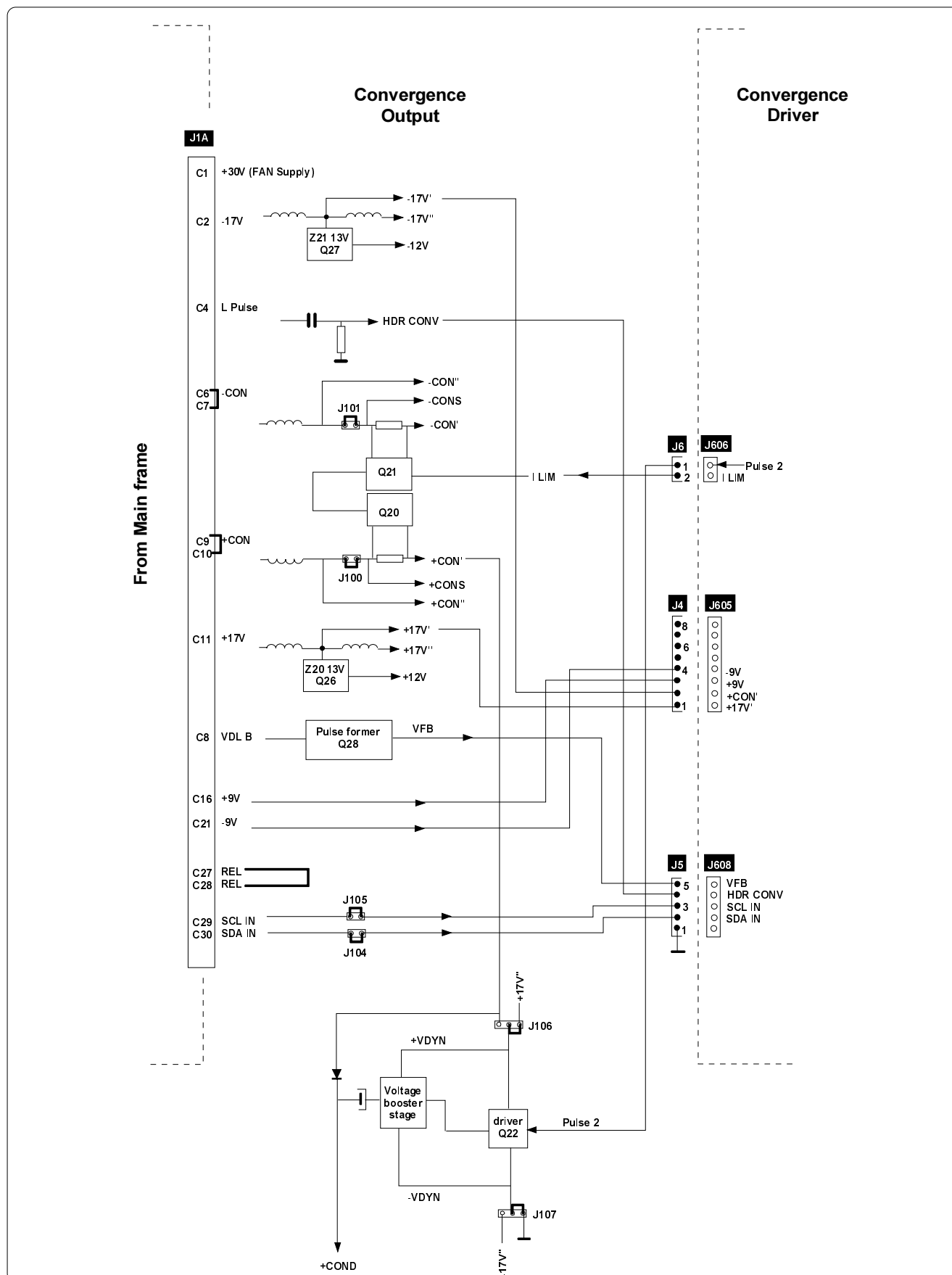
COMPONENTS MARKED WITH * OR Δ HAVE SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. BEFORE REPLACING ANY OF THESE COMPONENTS, READ CAREFULLY THE SERVICE SAFETY PRECAUTIONS. DO NOT DEGRADE THE SAFETY OF THIS SET THROUGH IMPROPER SERVICING.

Name	CONVERGENCE OUTPUT	Sheet	2/2
Module No.	R762513	PCB No.	R780409
Index	- 8	Rev	- 4
Date	19-03-1997	Drawn	JVDY
		Checked	GM
BARCO PROJECTION SYSTEMS			

COMP.	LOC.	SHT.	COMP.	LOC.	SHT.	COMP.	LOC.	SHT.
C1	A 1	1	J105	A 4	2	R103	G 3	1
C2	A 1	1	J300	G 6	2	R104	G 3	1
C5	A 2	1				R105	G 3	1
C6	B 3	2	L1	D 5	2	R106	G 3	1
C7	B 1	1	L3	C 6	2	R107	H 2	1
C8	B 2	1	L4	C 5	2	R108	H 2	1
C10	A 2	1	L5	A 6	2	R109	H 2	1
C11	A 2	1	L6	A 6	2	R110	H 2	1
C13	A 2	1	L7	A 5	2	R111	H 1	1
C14	C 1	1	L8	D 6	2	R112	H 2	1
C15	C 3	3	L300	F 4	4	R113	H 2	1
C16	A 2	1	L301	E 5	5	R115	H 2	1
C17	A 6	6	L302	E 5	5	R116	H 2	1
C18	A 6	6				R117	H 2	1
C19	A 6	6	NTC1	F 5	2	R118	L 3	1
C20						R151	A 5	1
C21	B 6	6	P1	B 2	1	R152	A 5	1
C22	B 6	6	P51	B 2	1	R153	A 5	1
C23	B 6	6	P101	H 2	1	R154	A 5	1
C24	B 6	6	P151	A 6	2	R155	A 5	1
C25	B 6	6	P201	A 6	2	R156	B 6	6
C30	B 3	3	P251	H 5	5	R157	B 6	6
C31	B 3	3				R158	B 6	6
C32	C 4	4	O1	B 2	1	R159	B 6	6
C33	C 4	4	O2	B 2	1	R160	B 6	6
C34	C 4	4	O3	B 2	1	R161	B 6	6
C35	C 4	4	O4	C 2	2	R162	B 6	6
C38	D 6	6	O5	B 2	1	R163	B 6	6
C39	D 6	6	O6	B 1	1	R165	C 3	3
C40	D 6	6	O7	B 1	1	R166	C 3	3
C51	D 1	1	O8	B 2	1	R167	C 3	3
C52	D 1	1	O20			R168	C 3	3
C55	D 2	2	O21	A 6	6	R201	D 6	6
C56	D 2	2	O28			R202	D 6	6
C57	E 1	1	O51	E 2	2	R203	D 6	6
C58	E 2	2	O52	E 2	2	R204	D 6	6
C60	D 2	2	O53			R205	D 6	6
C61	D 2	2	O54	E 2	2	R206	D 6	6
C63	D 2	2	O55	E 2	2	R207	D 6	6
C64	F 1	1	O56			R208	D 6	6
C65	F 1	1	O57	E 2	2	R209	E 4	4
C70	H 2	2	O58	H 2	2	R210	E 4	4
C71	H 2	2	O101	H 2	2	R211	E 4	4
C72	H 2	2	O102	H 2	2	R212	E 4	4
C73	H 2	2	O103	H 2	2	R213	E 4	4
C74	H 2	2	O104	H 2	2	R214	E 4	4
C75	H 2	2	O105	H 2	2	R215	F 5	5
C76	A 4	4	O106	H 1	1	R217	F 5	5
C77	C 4	4	O107	H 1	1	R218	F 5	5
C101	C 4	4	O108	H 2	2	R251		
C102	G 2	2	O51	B 2	1	R252	G 6	6
C105	G 2	2	O152	B 4	4	R253	G 6	6
C106	H 3	3	O153	B 5	5	R254	G 6	6
C107	H 3	3	O154	C 5	5	R255	G 6	6
C108	H 3	3	O155	C 5	5	R256	G 6	6
C110	G 2	2	O156	C 4	4	R257	H 6	6
C111	G 2	2	O157	B 4	4	R258	H 6	6
C113	G 2	2	O158	B 5	5	R259	H 6	6
C114	H 1	1	O201	E 4	4	R260	H 4	4
C115	H 1	1	O202	E 4	4	R261	H 4	4
C155	A 5	5	O203	E 5	5	R262	H 5	5
C156	B 4	4	O204	F 5	5	R263	H 4	4
C157	B 4	4	O205	F 5	5	R265	H 4	4
C158	B 4	4	O206	F 5	5	R266	H 4	4
C160	A 5	5	O207	E 4	4	R267	H 5	5
C161	A 5	5	O208	E 5	5	R268	H 6	6
C163	A 5	5	O251	H 5	5	R300	H 6	6
C164	A 5	5	O252	H 5	5	R301	H 6	6
C165	C 6	6	O253	H 5	5	R302		
C205	E 6	6	O254	H 5	5	R303		
C206	E 6	6	O255	H 5	5	R304		
C207	E 6	6	O256	H 5	5	R305		
C208	E 6	6	O257	H 4	4	R306	G 6	6
C210	D 5	5	O258	H 5	5			
C211	D 5	5	O300	F 5	2	SRI	B 6	6
C212	D 5	5				SR2	B 6	6
C214	D 4	4	R1	A 2	1	Z1	B 2	1
C215	F 6	6	R2	A 2	1	Z2	B 2	1
C255	F 6	6	R3	A 3	3	Z3	B 2	1
C256	H 6	6	R4	A 3	3	Z4	B 2	1
C257	H 6	6	R5	A 2	2	Z5	C 1	1
C258	H 5	5	R6	A 2	2	Z6	C 1	1
C260	H 5	5	R7	B 2	2	Z7	C 1	1
C261	G 6	6	R8	B 3	3	Z51	F 5	5
C263	G 6	6	R9	B 3	3	Z52	F 5	5
C264	G 6	6	R10	B 3	3	Z53	F 5	5
C265	H 6	6	R11	B 1	1	Z54	E 1	1
C300	H 6	6	R12	B 2	2	Z55	E 1	1
C301	H 6	6	R13	B 2	2	Z56	E 1	1
C302	H 6	6	R15	C 2	2	Z57	E 1	1
C303	G 5	5	R16	C 2	2	Z102	H 2	1
C304	F 5	5	R17	C 2	2	Z103	L 2	1
C305	F 5	5	R18	C 3	3	Z104	H 1	1
C41	G 3	3	R19	C 3	3	Z105	H 1	1
C412	G 3	3	R21	B 5	5	Z106	H 1	1
			R22	B 5	5	Z151	B 6	6
D3	C 2	2	R23	B 5	5	Z152	B 6	6
D20	B 5	5	R24	B 5	5	Z153	B 6	6
D21	B 6	6	R25	B 6	6	Z154	B 6	6
D24	B 6	6	R26	B 6	6	Z155	C 4	4
D25	C 4	4	R27	B 6	6	Z156	B 4	4
D26	C 2	2	R28	C 2	2	Z201		
D27	G 1	1	R29	A 2	2	Z202		
D28	C 2	2	R40	C 2	2	Z203		
D53	C 2	2	R43	B 4	4	Z204	F 4	4
D54	F 5	5	R44	B 4	4	Z205	F 4	4
D103	L 2	1	R45	B 5	5	Z206	H 5	5
D104	H 1	1	R46	C 3	3	Z251	H 5	5
D153	C 4	4	R47	C 3	3	Z252	H 5	5
D154	C 4	4	R51	D 3	3	Z253	H 4	4
D203	F 5	5	R52	D 3	3	Z254	H 4	4
D204	F 4	4	R53	D 3	3	Z255	H 4	4
D253	F 4	4	R54	D 3	3	Z300	F 5	5
D254	F 4	4	R55	D 3	3	Z301	F 5	5
D300	F 5	5	R56	E 3	3	Z302	F 5	5
D301	F 5	5	R57	E 3	3			
D302	F 5	5	R59	E 1	1			
			R60	E 1	1			
IC1	A 5	1	R61	E 1	1			
IC1	A 2	1	R62	E 2	2			
IC1	A 1	1	R63	E 2	2			
IC2	C 5	5	R65					
IC3	C 5	5	R66					
IC51	D 5	5	R67	F 2	2			
IC51	D 5	5	R68	F 3	3			
IC51	D 1	1	R80	D 4	4			
IC101	G 1	1	R81	A 4	4			
IC101	C 5	5	R82	C 4	4			
IC101	G 1	1	R83	C 4	4			
IC300	D 5	5	R84					
			R85					
			R87	F 2	2			
J1	A 2	2	R88	12				
J2	C 4	4	R89	12				
J4	D 4	4	R90	C 5	5			
J6	A 4	4	R91	F 5	5			
J7	E 4	4	R92	F 5	5			
J8	F 4	4	R93	15	5			
J9	A 4	4	R94	15	5			
J10	A 6	6	R101	C 2	2			
J104	A 4	4	R102					

Blockdiagram Power output stage convergences





Technical description " CONVERGENCE OUT" 762519

The purpose of the power amplifiers is to bring the adjusted signals to a sufficient high level that the convergence coils can be fully driven. Important hereby is that the drift must be kept as low as possible and that the signals must be carried to the coils without using coupling capacitors.

It is obvious that the coils react differently on signals at a high (line) frequency than on low frequency signals. Much more power is required for the high scanning than for the low scanning range. The power supply + / - CONV for these power amplifiers is a variable line frequency tracked voltage delivered by the "G2 + Diagnostic" board.

Six identical amplifiers feed the six convergence coils, two for each picture tube. We'll discuss only the amplifier served with "RHin" (Red Horizontal).

Note that "Horizontal " here relates to the moving direction (of lines of a crosshatch pattern) and not to the "horizontal" frequency. The "RHin" signal contains waveforms at line and vertical frequency.

That's also the reason why the amplifier stages are identical.

The signal is first passed to the non-inverting input of an OPAMP MC34082, the inverting input receives a feedback signal from the output. The purpose of this stage is to stabilise the overall gain (DC and AC) of the amplifier.

The output of the OPAMP drives an inverting amplifier Q1 with high frequency compensation in the emitter.

The input signal to the OPAMP is around zero level, Q1 is therefore supplied with +12V and -CONV. The same applies for the next amplifier Q3.

This next MOSFET is supplied from the dynamic+COND supply line through a variable (line frequency tracked) current generator Q2, and, from the -CONV.

This dynamic voltage is the + / - CON voltage boosted up during the "pulse 2" time. By this increased supply voltage the slew rate during the horizontal retrace time is considerably improved. The end result is a better behaviour of the convergence coils just after the retrace time, thus, in the beginning of the scan.

The dropped voltage across R12 / P1 / R13 is partially applied to the base-emitter multiplier Q5 to provide sufficient voltage to drive Q4 / Q6 push-pull output stage. The zeners just limit the gate - source voltage for protection.

The current flow from the + / - CONV is preferable symmetrical. If for some reason one of the supplies is requiring more current than the other supply, the feedback system can no more correct the situation. It is possible that the problem is caused by a lack of symmetry of a pre- driver stage.

Further heating of an output that could lead to a breakdown might be avoided by inhibiting the sawtooth generator (see schematic "Horizontal Axis Convergence", sheet 1)

The electronic circuit that generates the *Ilim* is represented on sheet 2 of the "CONV OUT" schematic.

The current taken from the + CON' develops a voltage across SR1 that is applied to the base of Q20. The current taken from the - CON' does the same for Q21. As soon Q21 is switched on, the *Ilim* turns on Q22 (See sheet 1 of Horizontal Axis CONV) and the sawtooth generator is inhibited.

Convergence module (OUTPUT)

R762519

Parts listing Convergence module (Output) R762519

ITEM NO.	SIT.	DESCRIPTION	ITEM NO.	SIT.	DESCRIPTION	
1000	R133039	SPRL 8 D4 D 1.2 C	42	C110	R112733	C CE MI 330P K100E2 1
1070	R133039	SPRL 8 D4 D 1.2 C	12	C111	R1127741	C CE MI 100N S 63E1
1050	R133063	QACC ISO MICA SOT93	16	C153	R112386	C N152MI 390P J 63E2 1
1010	R3133921	JMD JMP P 1E1SN	8	C154	R112365	C N750MI 180P J 63E2 1
1060	R3153151	JRVT MBT D 2.3L13	12	C155	R112737	C CE MI 680P K100E2 1
1021	R3481031	WU JUMP 0.51 10 ISO	2	C156	R1127741	C CE MI 100N S 63E1 1
1020	R348109	WU JUMP 0.6 25	1	C158	R1115915	C EL5 RA 4M7M 35E2 85
1053	R3620226	SCR D84 M3 X 8 SI	16	C159	R112242	C NPO MI 100P J 63E2
1041	R3631059	SCR D933 M3 X 8 XIC	4	C160	R112733	C CE MI 330P K100E2 1
1051	R803243	FRMPJ51 CNVSPGFIXQ	4	C161	R1127741	C CE MI 100N S 63E1 1
1040	R806124	FRMRODEN CNVOUT HTSNK	1	C162	R1137121	C POMERA 10N K100E2
1052	R806125	QACC SPG	2	C163	R1137161	C POMERA 22N K100E2
C 1	R1127741	C CE MI 100N S 63E1		C203	R112386	C N152MI 390P J 63E2 1
C 2	R1127741	C CE MI 100N S 63E1		C204	R112365	C N750MI 180P J 63E2 1
C 3	R112741	C CE MI 1N5K100E2	1	C205	R112737	C CE MI 680P K100E2 1
C 4	R112737	C CE MI 680P K100E2	1	C206	R1127741	C CE MI 100N S 63E1 1
C 5	R112362	C N750MI 100P J 63E2	1	C208	R1115915	C EL5 RA 4M7M 35E2 85
C 6	R1127741	C CE MI 100N S 63E1		C209	R112242	C NPO MI 100P J 63E2
C 8	R1115915	C EL5 RA 4M7M 35E2 85		C210	R112733	C CE MI 330P K100E2 1
C 9	R112242	C NPO MI 100P J 63E2		C211	R1127741	C CE MI 100N S 63E1 1
C 10	R112733	C CE MI 330P K100E2	1	C253	R112386	C N152MI 390P J 63E2 1
C 11	R1127741	C CE MI 100N S 63E1	1	C254	R112365	C N750MI 180P J 63E2 1
C 15	R1137161	C POMERA 22N K100E2		C255	R112737	C CE MI 680P K100E2 1
C 16	R111164	C EL AX1000M T 25E14 85	1	C256	R1127741	C CE MI 100N S 63E1 1
C 17	R111164	C EL AX1000M T 25E14 85	1	C258	R1115915	C EL5 RA 4M7M 35E2 85
C 18	R111223	C EL AX 470M T100E10 85	1	C259	R112242	C NPO MI 100P J 63E2
C 19	R111223	C EL AX 470M T100E10 85	1	C260	R112733	C CE MI 330P K100E2 1
C 20	R111500	C EL RA 47M M 10E2 85		C261	R1127741	C CE MI 100N S 63E1 1
C 21	R111223	C EL AX 470M T100E10 85	1	C300	R1159081	C PP RA 470P J100E2
C 22	R111500	C EL RA 47M M 10E2 85		C301	R113720	C POMERA 47N K 63E2
C 23	R111223	C EL AX 470M T100E10 85	1	C302	R111489	C EL RA 470M T 35E2 85 1
C 24	R113724	C POMERA 100N K 63E2		C303	R111531	C EL RA 10M M 35E2 85
C 25	R112743	C CE MI 2N2K100E2		C304	R111479	C EL RA 470M Z 25E2 85 1
C 26	R112368	C N750MI 330P J 63E2		C305	R112735	C CE MI 470P K100E2
C 27	R1113889	C EL RA 47M M100E2 85	1	D 3	R131637	D R BA158 600400 DO7
C 28	R112681	C N750MI 15P G500E2		D 4	R131637	D R BA158 600400 DO7
C 29	R111531	C EL RA 10M M 35E2 85		D 20	R131621	D S 1N4148 075150 DO35
C 30	R1137121	C POMERA 10N K100E2		D 21	R131621	D S 1N4148 075150 DO35
C 31	R113724	C POMERA 100N K 63E2		D 23	R131621	D S 1N4148 075150 DO35
C 32	R112760	C CE MI 3N3K103E2		D 24	R131954	D R BYW29 20008A TO220 1
C 33	R111476	C EL RA 47M M 25E2 85		D 25	R131621	D S 1N4148 075150 DO35
C 34	R111476	C EL RA 47M M 25E2 85		D 26	R131954	D R BYW29 20008A TO220 1
C 35	R111479	C EL RA 470M Z 25E2 85	1	D 53	R131637	D R BA158 600400 DO7
C 36	R1113889	C EL RA 47M M100E2 85	1	D 54	R131637	D R BA158 600400 DO7
C 37	R1137161	C POMERA 22N K100E2		D103	R131637	D R BA158 600400 DO7
C 38	R111476	C EL RA 47M M 25E2 85		D104	R131637	D R BA158 600400 DO7
C 51	R1127741	C CE MI 100N S 63E1		D153	R131637	D R BA158 600400 DO7
C 52	R1127741	C CE MI 100N S 63E1		D154	R131637	D R BA158 600400 DO7
C 53	R112741	C CE MI 1N5K100E2		D203	R131637	D R BA158 600400 DO7
C 54	R112737	C CE MI 680P K100E2	1	D204	R131637	D R BA158 600400 DO7
C 55	R112362	C N750MI 100P J 63E2	1	D253	R131637	D R BA158 600400 DO7
C 56	R1127741	C CE MI 100N S 63E1		D254	R131637	D R BA158 600400 DO7
C 58	R1115915	C EL5 RA 4M7M 35E2 85		D300	R131621	D S 1N4148 075150 DO35
C 59	R112242	C NPO MI 100P J 63E2		D301	R131621	D S 1N4148 075150 DO35
C 60	R112733	C CE MI 330P K100E2	1	D302	R131950	D R BYV27 15002A SOD57 1
C 61	R1127741	C CE MI 100N S 63E1	1			
C101	R1127741	C CE MI 100N S 63E1		I 1	R134146	U 34082 MC DIP8 P 1
C102	R1127741	C CE MI 100N S 63E1		I51	R134146	U 34082 MC DIP8 P 1
C103	R112741	C CE MI 1N5K100E2	1	I101	R134146	U 34082 MC DIP8 P 1
C104	R112737	C CE MI 680P K100E2	1	I300	R137625	U 34063 DIP8 P 1
C105	R112362	C N750MI 100P J 63E2	1			
C106	R1127741	C CE MI 100N S 63E1		J 1	R313525	JEUR2CMBSP64E1C2S1,6 1
C108	R1115915	C EL5 RA 4M7M 35E2 85		J 4	R313928	JCT H MBT P 8 M2SN 1
C109	R112242	C NPO MI 100P J 63E2		J 5	R313925	JCT H MBT P 5 M2SN 1

Convergence module (OUTPUT)

R762519

J 6	R3485022	CD CT FTMT P 2 60	1	Q153	R132917	Q 2SK511 FN P TO126	1
J 7	R313923	J C T H MBT P 3 M2SN	1	Q154	R132942	Q IRF9630 FP P TO220	1
J 8	R34840611	CD CD FTMT P 6 65	1	Q155	R131411	Q BC549C N SS TO92	
J 9	R34840611	CD CD FTMT P 6 65	1	Q156	R132941	Q IRF632 FN P TO220	1
J 11	R3139626	J C T N NWT P 2 M2SN PC	1	Q201	R1325155	Q BF470 P P TO126	1
J 12	R313926	J C T H MBT P 6 M2SN	1	Q202	R1325155	Q BF470 P P TO126	1
J100	R3132862	JMD1 MBT P 2 E1SN	1	Q203	R132917	Q 2SK511 FN P TO126	1
J101	R3132862	JMD1 MBT P 2 E1SN	1	Q204	R132942	Q IRF9630 FP P TO220	1
J102	R313286	JMO1 C MBT P 3 R1SN 7,5	1	Q205	R131411	Q BC549C N SS TO92	
J103	R313286	JMO1 C MBT P 3 R1SN 7,5	1	Q206	R132941	Q IRF632 FN P TO220	1
J104	R3132862	JMD1 MBT P 2 E1SN	1	Q251	R1325155	Q BF470 P P TO126	1
J105	R3132862	JMD1 MBT P 2 E1SN	1	Q252	R1325155	Q BF470 P P TO126	1
J106	R313286	JMO1 C MBT P 3 R1SN 7,5	1	Q253	R132917	Q 2SK511 FN P TO126	1
J107	R313286	JMO1 C MBT P 3 R1SN 7,5	1	Q254	R132942	Q IRF9630 FP P TO220	1
J301	R3135722	JMT MBT P 3 R1 FL RED	1	Q255	R131411	Q BC549C N SS TO92	
				Q256	R132941	Q IRF632 FN P TO220	1
L 1	R775164	COILCHHORDEF	1	Q300	R131413	Q BC557 P SS TO92	
L 3	R775164	COILCHHORDEF	1				
L 4	R775164	COILCHHORDEF	1	R 1	R101540	R MF H 2K2 F 0W4 E3	
L 5	R775164	COILCHHORDEF	1	R 2	R101540	R MF H 2K2 F 0W4 E3	
L 6	R775164	COILCHHORDEF	1	R 3	R101536	R MF H 1K F 0W4 E3	
L 7	R775164	COILCHHORDEF	1	R 4	R101544	R MF H 4K7 F 0W4 E3	
L 8	R775164	COILCHHORDEF	1	R 5	R101542	R MF H 3K3 F 0W4 E3	
L300	R306222	CH TOR V 80 UH 2A	1	R 6	R101537	R MF H 1K2 F 0W4 E3	
L301	R774154	CHHORPJ45DHR	1	R 7	R101532	R MF H470E F 0W4 E3	
				R 8	R101537	R MF H 1K2 F 0W4 E3	
NTC1	R105016	R NTC 2K7 0W25	1	R 9	R101534	R MF H680E F 0W4 E3	
				R 10	R101248	R MF H 10K F 0W6 E4	
P 1	R107005	RTCE H500E M0W5 S7 TS	1	R 11	R101533	R MF H560E F 0W4 E3	
P 51	R107005	RTCE H500E M0W5 S7 TS	1	R 12	R101545	R MF H 5K6 F 0W4 E3	
P101	R107005	RTCE H500E M0W5 S7 TS	1	R 13	R101532	R MF H470E F 0W4 E3	
P151	R107005	RTCE H500E M0W5 S7 TS	1	R 14	R101524	R MF H100E F 0W4 E3	
P201	R107005	RTCE H500E M0W5 S7 TS	1	R 15	R101300	R CF H 1E J 1W15	1
P251	R107005	RTCE H500E M0W5 S7 TS	1	R 16	R101300	R CF H 1E J 1W15	1
				R 17	R103226	R MO H150E J 1W5	1
PC	R780409	PCDPJ51 G1208CNVOUT	1	R 18	R103620	R VVW H 4E7 K 4W	1
				R 20	R101548	R MF H 10K F 0W4 E3	
Q 1	R1325155	Q BF470 P P TO126	1	R 21	R101550	R MF H 15K F 0W4 E3	
Q 2	R1325155	Q BF470 P P TO126	1	R 22	R101549	R MF H 12K F 0W4 E3	
Q 3	R132917	Q 2SK511 FN P TO126	1	R 23	R101248	R MF H 10K F 0W6 E4	
Q 4	R132942	Q IRF9630 FP P TO220	1	R 24	R101548	R MF H 10K F 0W4 E3	
Q 5	R131411	Q BC549C N SS TO92		R 25	R101550	R MF H 15K F 0W4 E3	
Q 6	R132941	Q IRF632 FN P TO220	1	R 26	R101548	R MF H 10K F 0W4 E3	
Q 20	R132552	Q BF423 P SS TO92		R 27	R101248	R MF H 10K F 0W6 E4	
Q 21	R132516	Q BF422 N SS TO92		R 28	R101568	R MF H470K F 0W4 E3	
Q 22	R132922	Q BC639 N SS TO92	1	R 29	R101536	R MF H 1K F 0W4 E3	
Q 23	R132968	Q BC640 P SS TO92	1	R 30	R101560	R MF H100K F 0W4 E3	
Q 24	R132941	Q IRF632 FN P TO220	1	R 31	R101524	R MF H100E F 0W4 E3	
Q 25	R132942	Q IRF9630 FP P TO220	1	R 32	R101550	R MF H 15K F 0W4 E3	
Q 26	R131411	Q BC549C N SS TO92	1	R 33	R101536	R MF H 1K F 0W4 E3	
Q 27	R1314182	Q BC559C P SS TO92		R 34	R101336	R CF H 1K J 1W	1
Q 28	R131411	Q BC549C N SS TO92	1	R 35	R101552	R MF H 22K F 0W4 E3	
Q 29	R132941	Q IRF632 FN P TO220	1	R 36	R101548	R MF H 10K F 0W4 E3	
Q 30	R132942	Q IRF9630 FP P TO220	1	R 37	R101336	R CF H 1K J 1W	1
Q 51	R1325155	Q BF470 P P TO126	1	R 40	R101555	R MF H 39K F 0W4 E3	
Q 52	R1325155	Q BF470 P P TO126	1	R 41	R101535	R MF H820E F 0W4 E3	
Q 53	R132917	Q 2SK511 FN P TO126	1	R 42	R101535	R MF H820E F 0W4 E3	
Q 54	R132942	Q IRF9630 FP P TO220	1	R 43	R101542	R MF H 3K3 F 0W4 E3	
Q 55	R131411	Q BC549C N SS TO92		R 44	R101548	R MF H 10K F 0W4 E3	
Q 56	R132941	Q IRF632 FN P TO220	1	R 45	R101512	R MF H 10E F 0W4 E3	
Q101	R1325155	Q BF470 P P TO126	1	R 46	R101536	R MF H 1K F 0W4 E3	
Q102	R1325155	Q BF470 P P TO126	1	R 47	R101549	R MF H 12K F 0W4 E3	
Q103	R132917	Q 2SK511 FN P TO126	1	R 51	R101540	R MF H 2K2 F 0W4 E3	
Q104	R132942	Q IRF9630 FP P TO220	1	R 52	R101540	R MF H 2K2 F 0W4 E3	
Q105	R131411	Q BC549C N SS TO92		R 53	R101536	R MF H 1K F 0W4 E3	
Q106	R132941	Q IRF632 FN P TO220	1	R 54	R101544	R MF H 4K7 F 0W4 E3	
Q151	R1325155	Q BF470 P P TO126	1	R 55	R101542	R MF H 3K3 F 0W4 E3	
Q152	R1325155	Q BF470 P P TO126	1	R 56	R101537	R MF H 1K2 F 0W4 E3	

Convergence module (OUTPUT)


R762519

R 57	R101532	R MF H470E F 0W4 E3		R253	R101536	R MF H 1K F 0W4 E3	
R 58	R101537	R MF H 1K2 F 0W4 E3		R254	R101544	R MF H 4K7 F 0W4 E3	
R 59	R101534	R MF H680E F 0W4 E3		R255	R101542	R MF H 3K3 F 0W4 E3	
R 60	R101248	R MF H 10K F 0W6 E4		R256	R101537	R MF H 1K2 F 0W4 E3	
R 61	R101533	R MF H560E F 0W4 E3		R257	R101532	R MF H470E F 0W4 E3	
R 62	R101545	R MF H 5K6 F 0W4 E3		R258	R101537	R MF H 1K2 F 0W4 E3	
R 63	R101532	R MF H470E F 0W4 E3		R259	R101534	R MF H680E F 0W4 E3	
R 64	R101524	R MF H100E F 0W4 E3		R260	R101248	R MF H 10K F 0W6 E4	
R 65	R101300	R CF H 1E J 1W15	1	R261	R101533	R MF H560E F 0W4 E3	
R 66	R101300	R CF H 1E J 1W15	1	R262	R101545	R MF H 5K6 F 0W4 E3	
R 67	R103226	R MO H150E J 1W5	1	R263	R101532	R MF H470E F 0W4 E3	
R 68	R103620	R VVW H 4E7 K 4W	1	R264	R101524	R MF H100E F 0W4 E3	
R101	R101540	R MF H 2K2 F 0W4 E3		R265	R101300	R CF H 1E J 1W15	1
R102	R101540	R MF H 2K2 F 0W4 E3		R266	R101300	R CF H 1E J 1W15	1
R103	R101536	R MF H 1K F 0W4 E3		R267	R103226	R MO H150E J 1W5	1
R104	R101544	R MF H 4K7 F 0W4 E3		R268	R103620	R VVW H 4E7 K 4W	1
R105	R101542	R MF H 3K3 F 0W4 E3		R300	R1011907	R CFFH E1 J 0W4	1
R106	R101537	R MF H 1K2 F 0W4 E3		R301	R101555	R MF H 39K F 0W4 E3	
R107	R101532	R MF H470E F 0W4 E3		R302	R101549	R MF H 12K F 0W4 E3	
R108	R101537	R MF H 1K2 F 0W4 E3		R303	R101544	R MF H 4K7 F 0W4 E3	
R109	R101534	R MF H680E F 0W4 E3		R304	R101548	R MF H 10K F 0W4 E3	
R110	R101248	R MF H 10K F 0W6 E4		R305	R101538	R MF H 1K5 F 0W4 E3	
R111	R101533	R MF H560E F 0W4 E3		R306	R101536	R MF H 1K F 0W4 E3	
R112	R101545	R MF H 5K6 F 0W4 E3					
R113	R101532	R MF H470E F 0W4 E3		SR 1	R1012997	R CFFH E1 K 0W7	1
R114	R101524	R MF H100E F 0W4 E3		SR 2	R1012997	R CFFH E1 K 0W7	1
R115	R101300	R CF H 1E J 1W15	1				
R116	R101300	R CF H 1E J 1W15	1	Z 1	R131743	D ZEN 8V2 0W5 C DO35	
R117	R103226	R MO H150E J 1W5	1	Z 2	R131788	D ZEN 15V 0W5 C DO35	
R118	R103620	R VVW H 4E7 K 4W	1	Z 3	R131788	D ZEN 15V 0W5 C DO35	
R151	R101540	R MF H 2K2 F 0W4 E3		Z 4	R131788	D ZEN 15V 0W5 C DO35	
R152	R101540	R MF H 2K2 F 0W4 E3		Z 5	R131788	D ZEN 15V 0W5 C DO35	
R153	R101536	R MF H 1K F 0W4 E3		Z 6	R131754	D ZEN 3V3 0W5 C DO35	
R154	R101544	R MF H 4K7 F 0W4 E3		Z 20	R131721	D ZEN 13V 0W5 C DO35	
R155	R101542	R MF H 3K3 F 0W4 E3		Z 21	R131721	D ZEN 13V 0W5 C DO35	
R156	R101537	R MF H 1K2 F 0W4 E3		Z 51	R131743	D ZEN 8V2 0W5 C DO35	
R157	R101532	R MF H470E F 0W4 E3		Z 52	R131788	D ZEN 15V 0W5 C DO35	
R158	R101537	R MF H 1K2 F 0W4 E3		Z 53	R131788	D ZEN 15V 0W5 C DO35	
R159	R101534	R MF H680E F 0W4 E3		Z 54	R131788	D ZEN 15V 0W5 C DO35	
R160	R101248	R MF H 10K F 0W6 E4		Z 55	R131788	D ZEN 15V 0W5 C DO35	
R161	R101533	R MF H560E F 0W4 E3		Z 56	R131754	D ZEN 3V3 0W5 C DO35	
R162	R101545	R MF H 5K6 F 0W4 E3		Z101	R131743	D ZEN 8V2 0W5 C DO35	
R163	R101532	R MF H470E F 0W4 E3		Z102	R131788	D ZEN 15V 0W5 C DO35	
R164	R101524	R MF H100E F 0W4 E3		Z103	R131788	D ZEN 15V 0W5 C DO35	
R165	R101300	R CF H 1E J 1W15	1	Z104	R131788	D ZEN 15V 0W5 C DO35	
R166	R101300	R CF H 1E J 1W15	1	Z105	R131788	D ZEN 15V 0W5 C DO35	
R167	R103226	R MO H150E J 1W5	1	Z106	R131754	D ZEN 3V3 0W5 C DO35	
R168	R103620	R VVW H 4E7 K 4W	1	Z151	R131743	D ZEN 8V2 0W5 C DO35	
R201	R101540	R MF H 2K2 F 0W4 E3		Z152	R131788	D ZEN 15V 0W5 C DO35	
R202	R101540	R MF H 2K2 F 0W4 E3		Z153	R131788	D ZEN 15V 0W5 C DO35	
R203	R101536	R MF H 1K F 0W4 E3		Z154	R131788	D ZEN 15V 0W5 C DO35	
R204	R101544	R MF H 4K7 F 0W4 E3		Z155	R131788	D ZEN 15V 0W5 C DO35	
R205	R101542	R MF H 3K3 F 0W4 E3		Z156	R131754	D ZEN 3V3 0W5 C DO35	
R206	R101537	R MF H 1K2 F 0W4 E3		Z201	R131743	D ZEN 8V2 0W5 C DO35	
R207	R101532	R MF H470E F 0W4 E3		Z202	R131788	D ZEN 15V 0W5 C DO35	
R208	R101537	R MF H 1K2 F 0W4 E3		Z203	R131788	D ZEN 15V 0W5 C DO35	
R209	R101534	R MF H680E F 0W4 E3		Z204	R131788	D ZEN 15V 0W5 C DO35	
R210	R101248	R MF H 10K F 0W6 E4		Z205	R131788	D ZEN 15V 0W5 C DO35	
R211	R101533	R MF H560E F 0W4 E3		Z206	R131754	D ZEN 3V3 0W5 C DO35	
R212	R101545	R MF H 5K6 F 0W4 E3		Z251	R131743	D ZEN 8V2 0W5 C DO35	
R213	R101532	R MF H470E F 0W4 E3		Z252	R131788	D ZEN 15V 0W5 C DO35	
R214	R101524	R MF H100E F 0W4 E3		Z253	R131788	D ZEN 15V 0W5 C DO35	
R215	R101300	R CF H 1E J 1W15	1	Z254	R131788	D ZEN 15V 0W5 C DO35	
R216	R101300	R CF H 1E J 1W15	1	Z255	R131788	D ZEN 15V 0W5 C DO35	
R217	R103226	R MO H150E J 1W5	1	Z256	R131754	D ZEN 3V3 0W5 C DO35	
R218	R103620	R VVW H 4E7 K 4W	1	Z300	R131720	D ZEN 6V2 0W5 C DO35	
R251	R101540	R MF H 2K2 F 0W4 E3		Z301	R131720	D ZEN 6V2 0W5 C DO35	
R252	R101540	R MF H 2K2 F 0W4 E3		Z302	R131720	D ZEN 6V2 0W5 C DO35	

Convergence module (OUTPUT)

R762519

PRODUCT SAFETY NOTICE

Components identified by  have SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY. Before replacing any of these components, read carefully the service safety precautions.

