INTERLOCKS								ITEM	COIL	MAIN	ZONE
				GH 857	EF 621	CD 818	AB 362	FPC	621		36
						LM	JK 857				
						CD 334	AB 362	FPR	832		36
						GH	EF				
					GH	EF 656	CD	FS1	653	114 116 133 135	31
							AB 632				
					GH	EF 656	CD	FS2	655	114 116 133 135	31
							AB 632				
							EF 655	FS3	656	114 116 133 135	31
					GH 120	CD 846	AB 632				
			LM 845	GH 665	EF 657	CD 637	AB 635	FSA	657		36
							JK 665				
						CD 646	AB 657	FTR		134 135 136 632	31
						GH 642	EF 847				
						CD 823	AB 857	GFR	852		36
						GH 649	EF 629				
						CD 650	AB 662	GFRX	852		36 *
						GH 664	EF				
					3 662	2 X	1 664	GFRX	852		36 *
					3 X	2 650	1 X				
						CD 827	AB	GR	131 824		36
						GH 845	EF 818				
							A 622	GS	334		36
							B 636				
						CD 349	AB 350	HTR	348		20 *A
						GH	EF				
				GH	EF 633	CD 136	AB 134	IR	641		36
						LM	JK				
							GH 818	NVR	238		36
					EF 337	CD 338	AB 238				
						GH 641	EF 637	P1	635	126	31
						CD 119	AB 638				
						GH 665	EF 636	P2	636	125	31
						CD 632	AB 639				
						GH 665	EF 646	P3	636	124	31
						CD 629	AB 242				
						GH 846	EF 653	P4	637	119	31
						CD 632	AB 632				

INTERLOCKS								ITEM	COIL	MAIN	ZONE
						CD 841	AB 853	PCR	841		36
						GH	EF 840				
				GH	EF 635	CD	AB 625	RER	870		36
						LM 835	JK 624				
						GH 625	EF 634	RVF1	625	113 116	31
						CD 626	AB				
						GH 624	EF 634	RVF2	624	113 116	31
						CD 626	AB 625				
						GH 626	EF 635	RVR3	626	132 135	31
						CD 624	AB 626				
						GH 627	EF 635	RVR4	627	132 135	31
						CD 624	AB 627				
						GH 124	EF 849	S13	638	125	31
						CD 629	AB 636				
						GH 124	EF 654	S24	639	125	31
						CD 630	AB 636				
						GH 846	AB	SF	849	124 126	36
						EF 850	CD 650				
				JK 233	EF 123	CD 115	AB 114	SFT	878		38
						LM 123	GH 113				
							B	TDB	853		36
							A 878				
							B 835	TDS	850		36
							A				
					EF 334	CD 333	AB 333	TLPC	336		36
							GH				
						2-6 X	1-5 X	TLTD	335		36
						4-6 335	3-5 335				
	R 121	Q 121	N 632	L 653	H 844	F 636	D 846	TR	845		36
			M	K 654	E 638	C 849	A 645				
							AB 850	WCR	242		36
							CD				
							GH 850	WS	136 241		36
						LM	JK 849				
							AB 850	WS13	124		36
							CD 849				
							AB 850	WS24	124		36
							CD 849				

NO	CA ⊣⊢	ZONE	CR ─▷├─ A	B	C	D	ZONE	RE ─▭─ A	B	C	ZONE	RH	ZONE
1	642	36	240				36	124	124		31	658	36
2			245				36	119	119	134	36	661	36
3			671				36	126	126	114	36	666	36
4			671				36	118	116	114	36	668	36
5			648				36	118	116	114	36	666	36
6			679				80	239	246		36	666	36
7			645				36					666	36
8								647	647		36		
9			855				36	668	632	633	36		
10			857				36					126	38
11	830	80	646				36						
12			836				36						
13			835				36	666	112		36		
14			645				36		242	241	36		
15			369				36	642			36		
16			649				36	361	360	358	31		
17			673				36	358	358	359	31		
18			336				36						
19			652				36	353	354	355	31		
20			230				31						
21			230				31						
22			240				36						
23													
24	673	36											
25			119				38	113			38		
26			862				38	129	126		38		
27								129	128		38		
28								125			38		
29													
30			653				36	653			36		
31			654				36	654			36		
32			655				36	655			36		
33													
34													
35													
36													
37													
38													
39								114			36		
40			834				36						
41	124	38	837				36	127			38		
42			838				36	127			38		
43								124			38		
44													
45			125				38						
46													
47													
48													
49													
50			873				51	556	556		50	874	50
51	340	51						840			51		
52	843	51						851			51		
53								882			51		
54								551	551		51		
55								872	854		51		
56								558			51		
57								834			51		
58													
59													
60													
61													
62													
63	663	36						664			36		
64	127	38											
65													
66													
67													
68													
69													
70													
71													
75								233			31		
82			683				80						
90			823				36						
99								355			51		

MISC ITEM	LOC	ZONE
AGR	825	36
CR-BC	362	31
DB-CO	843	39
DBR	125 662	38
DBZ	665	38
EFCO	621	20 39
ENG STOP	335 621	39
ETS	823	20
FM1 FM2 FM3	230 658 116 662	31
FSV	835	10
GR CO	131	37
GVT	132 246	31
HTT	349	10
LR	659	20
MGT	134 247	31
MV DBI	842	10
MV AS	833	10
MV CC	831	80
MV OS	340	10
MV RS	682	20
MV SH	676	80
ORS	650	20
PCS	842	10
PLS	662 667	36
RE-BC	352	31
RE-DB	876	51
RE-MFS	114 116 132 134	31
RE-SF	133	31
RS	682	20
T1	246 672	31
T2	247 672	31
TA	678	20
TB	681	20
TC	682	20
TRP	117 662 860	36
VR	368	36
WST 14	117 131 239	31
WST 23	117 131 246	31
Z1	124	38

SPARES WHICH MAY BE AVAILABLE FOR USE

RE6C	25Ω
RE14A	15KΩ
RE27B	15KΩ
RE28B	100Ω

THS

LOC	SWITCH		STOP	IDLE	1	2	3	4	5	6	7	8
	IDLE											
841		CD		●								
853	1-8	AB			●	●	●	●	●	●	●	●
856	STOP,5,6	AB	●						●	●		
855		CD	●						●	●		
	3-8											
858		CD					●	●	●	●	●	●
861	5-8	AB	●	●	●	●	●	●				
862		CD							●	●	●	●
	2,4,6,8											
863		CD				●		●		●		●
873	BRK 1-8	AB			■	■	■	■	■	■	■	■
842		CD			■	■	■	■	■	■	■	■

SHS

LOC	SWITCH		PWR	OFF	BRK
	P				
872		CD	●		
877	B	AB			●
878		CD			●

RHS

LOC	SWITCH		FOR	CTR	REV
871	F	AB	○		
872		CD	●		
869	R	AB			○
870		CD			●

FP/ES

LOC	SW	FP	OFF	ES
361	A	●		
335	B	●	●	
362	C		●	●
334	D			●

IS

LOC	SW	ST	RUN
334	AB	●	
855	CD		●
845	EF		●
636	GH		●
818	JK		●
337	LM		●
852	NP		●
649	QR	●	

TPS

SWITCH		LOC	FUNCTION	1	2	3	4	5	6	7	8	9	10
1	AB	644	POSITIONER	■	■	■	■	■	■	■	■	■	
	CD	647											
2	AB CD	649	LOWER LIMIT		■	■	■	■	■	■	■	■	■
3	AB CD	653	FS1		■		■		■				
4	AB CD	655	FS2			■	■			■		■	
5	AB CD	656	FS3					■	■				■
6	AB CD	845	TR								■	■	■
7	AB	643	FTR KNOCKDOWN	■	■	■	■	■	■				
	CD	646											
8	AB CD	646	UPPER LIMIT	■	■	■	■	■	■	■	■	■	
9	AB CD	629	DYN BRK INTLK	■									

"*" WHERE APPLIED; INDICATES A DEVICE OR CIRCUIT WHICH APPEARS ONLY ON SOME UNITS WITHIN THE SERIES.

"*A" A-UNITS ONLY; INDICATES A DEVICE OR CIRCUIT WHICH APPEARS ON UNITS 3014-3019, 3003.

10-29-97
DRG 3015, 3017, 3018
3003

GP30

DATE OF DRAWING 12/4/78

THIS DRAWING WAS DERIVED FROM EMD DRG 8329631, "SCHEMATIC WIRING", REVISION G AND EMD DRG 8329632, "PHYSICAL WIRING", REVISION G. THE FOLLOWING MODIFICATIONS WERE ALSO INCLUDED:

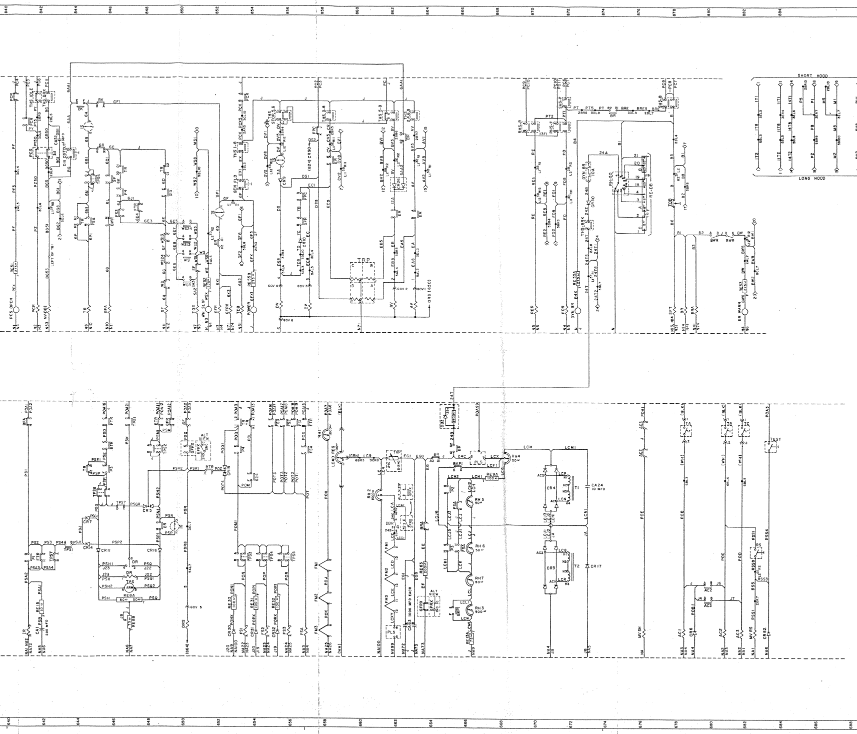
CR50 BLOCKING RECTIFIER PER
MS. 9500 ; ISOLATE 18T & 19T
TRAINLINES; AAR TRAINLINE
COMPLIANCE PER M.S. 9500,
9505, 9518,
MODIFIED RADIATOR SPRAY;
ADD RADIO & WATER COOLER (A-UNITS);
REMOVE BATT. CHARGING AMMETER;
MODIFIED TOILET HEATING;
APPLY RH-50 & RE-DB;

10-80	A	APPLY AUTO GR RESET; APPLY DBR PANEL PER MI 9590;
8-84	B	CORRECT CP3,4 FROM [illegible] STRING;

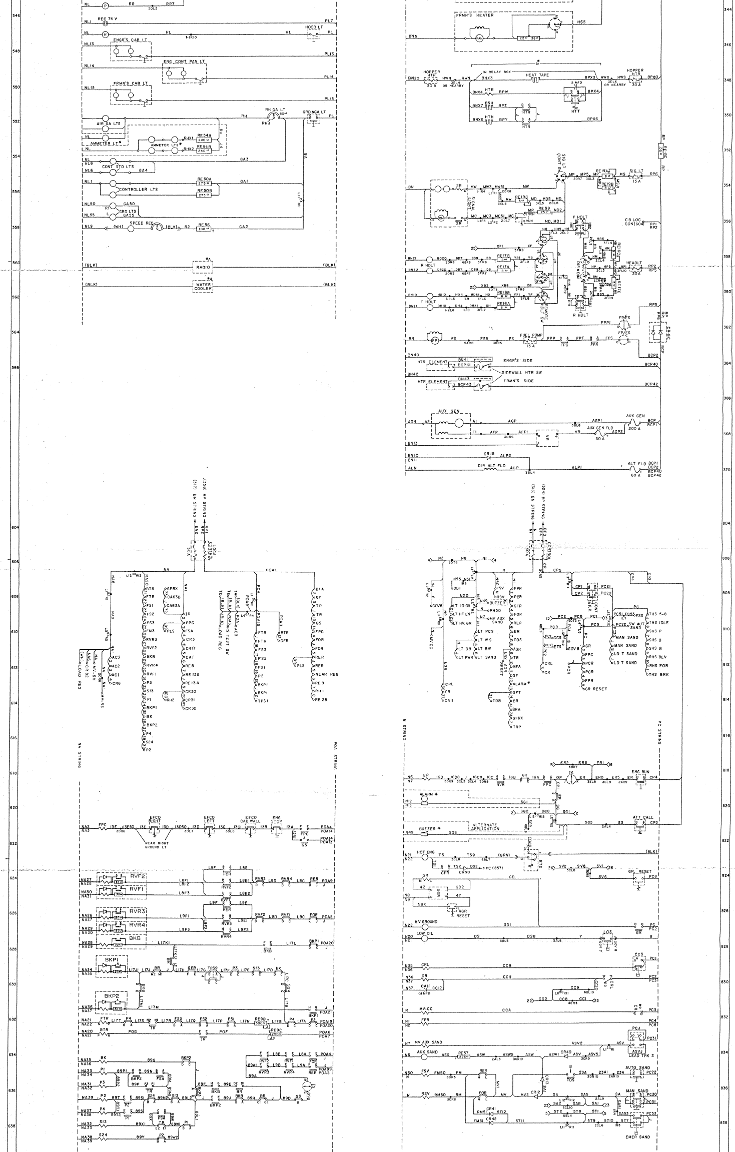
GP 30
3014-3027
ALSO 3003

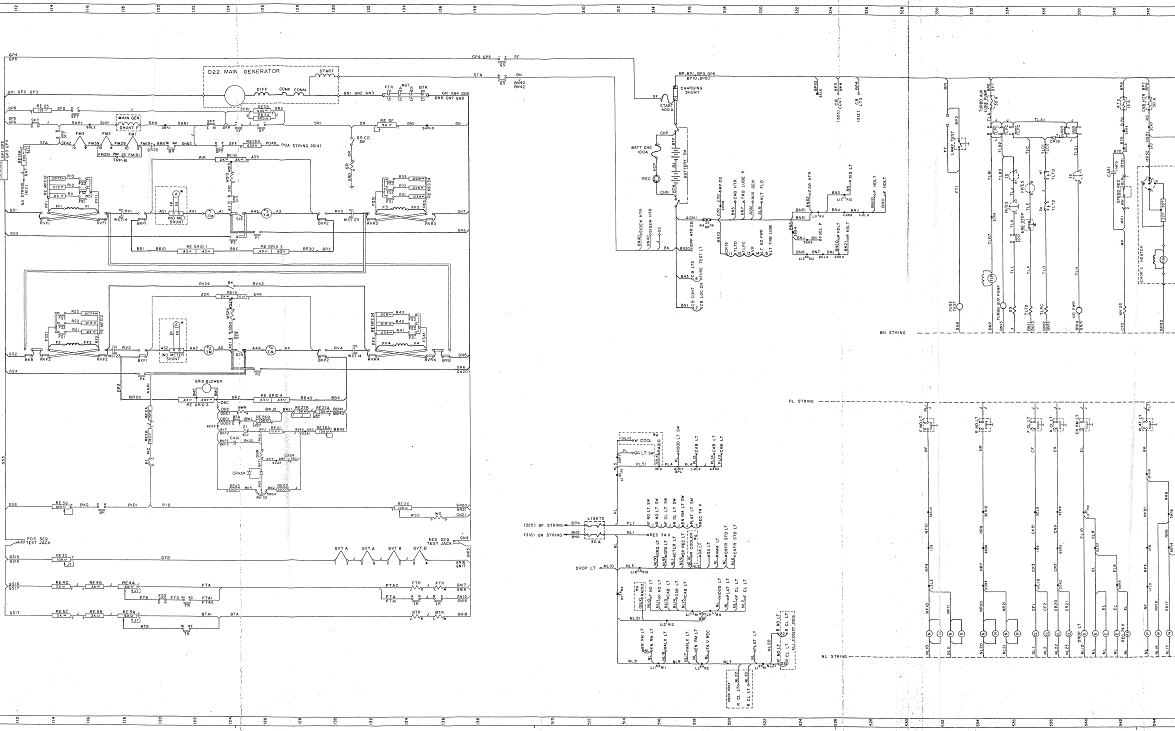
ELECTRICAL DIAGRAM
PHYSICAL SCHEMATIC
CONDUIT & TERMINAL BOARD
DEVICE LOCATOR

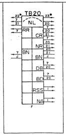
DRAWING NO	FILE NO
28668-4	D17-1R


SHORT HOOD
LONG HOOD
PCS OPEN
PCR
MV-DBI
TR
BFA
SF
TDS
WH SLIP
GFR
GFRX
POWER
DV
CV
BV
AV
ORS (650)
TRP
RER
FOR
DYN BR
RE-DB
RH-50
THS-BRK
BR
SFT
BR WARN
D.B. CUTOUT
GEN FLD
LEFT OF TBI
THS IDLE
THS I-8
THS STOP 5,6
THS 3-8
THS 5-8
THS 5,6,8
RHS-R
RHS-F
RHS-B
PSA1
PSA2
CR11
CR14
CR16
DR
RE8A
RE8B
ORS
(664)
POT
POM
POH
LOAD REG
RH1
RH2
FM1
FM2
FM3
CA63 1000 MFD EACH
ALT VIEW
LCX
PLS
RH3
RH4
RH5
RH6
RH7
CR3
CR4
T1
T2
CA24 10 MFD
CR17
MV SH
AC1
AC2
AC3
CR6
POB1
MV RS
CR82
RS
TEST
TA
TB
TC
(WH)
(BLK)
840
842
844
846
848
850
852
854
856
858
860
862
864
866
868
870
872
874
876
878
880
882
884
640
642
644
646
648
650
652
654
656
658
660
662
664
666
668
670
672
674
676
678
680
682
684
686
688

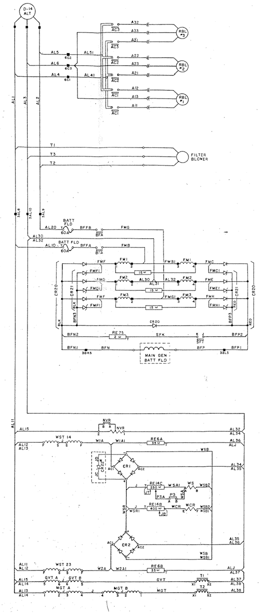
INTERLOCKS								ITEM	COIL	MAIN	ZONE
								AC1	678	219 220	80
						CD	AB 680	AC2	681	217 218	80
						GH	EF 676				
						CD	AB 680	AC3	682	215 216	80
						GH	EF 676				
						CD	AB	BFA	846	227 228	36
						GH 641	EF 124				
						GH 117	EF 844	BK	634	124	31
						CD 629	AB 845				
						GH 636	EF 628	BKB	628	113 136	31
						CD 630	AB 636				
						GH 631	EF 665	BKP1	629	119 119	31
						CD 628	AB 665				
						GH 635	EF 636	BKP2	631	129 129	31
						CD 634	AB 636				
R 874	Q 862	N 120	L 629	H	G 665	F	D 636	BR	878		38
				M 629	K 852	C 636	A 664				
						CD	AB	BRA	879		36
						GH	EF 664				
						CD 646	AB	BTR	135 135 136 633		31
						GH 649	EF 651				
				AB 880	KL X	FG X	CD 881	BWR	125		38
					KM X	GH 846	DE X				
						BF X	AE	CR	829		80
						DF 831	CE				
						BF 829	AE	CRL	829		80
						DF X	CE				
						6-8 647	2-8 647	DR	647		36
				GH 649	EF 858	CD 862	AB 863	ER	818		36
						LM	JK 819				
				GH	EF 634	CD	AB 624	FOR	871		36
						LM 836	JK 626				

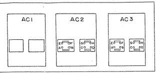

REC 74 V
HOOD LT
ENGR'S CAB LT
ENG CONT PAN LT
FRMN'S CAB LT
RH GA LT
GRD & GA LT
AIR GA LTS
AMMETER LT *
AMMETER LTS *
CONT STD LTS
CONTROLLER LTS
GRD LTS
SPEED REC
RADIO
WATER COOLER
FRMN'S HEATER
HOPPER HTR
IN RELAY BOX
HEAT TAPE
SIG LT CONT SW
SIGNAL LIGHT
CB LOC CON(604)
F HDLT
R HDLT
DIF & DIM
REMOTE HDLT SW
HEADLT
FUEL PUMP
HTR ELEMENT
ENGR'S SIDE
SIDEWALL HTR SW
FRMN'S SIDE
AUX GEN
AUX GEN FLD
VR
ALT FLD
(356) RP STRING
(317) BN STRING
(324) BP STRING
(316) BN STRING
LOCAL CONTROL
CONTROL
NA STRING
POA STRING
N STRING
PC STRING
LOAD REG
RS TEST SW
NEAR RE6
AGR RESET
GR RESET
ENG RUN
ALARM *
ATT CALL
BUZZER *
ALTERNATE APPLICATION
HOT ENG
HV GROUND
LOW OIL
MV-CC
MV AUX SAND
AUX SAND
LEAD TRK S
AUTO SAND
MAN SAND
EMER SAND
EFCO RIGHT
EFCO LEFT
EFCO CAB WALL
ENG STOP
NEAR RIGHT GROUND LT
RVF2
RVF1
RVR3
RVR4
BKB
BKP1
BKP2

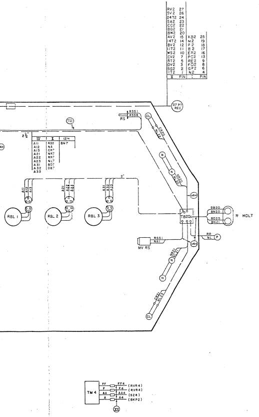

D22 MAIN GENERATOR
START
DIFF
COMP COMM
MAIN GEN SHUNT F
TRP-B
POA STRING (614)
NA STRING (612)
GR CO SW
GRD
IND MET SHUNT
IND METER SHUNT
RE GRID 1
RE GRID 2
RE GRID 3
RE GRID 4
GRID BLOWER
RH10
CR45A
POS SEQ TEST JACK
NEG SEQ TEST JACK
GVT A
GVT B
FTR
MGT
BTR
CHARGING SHUNT
START 400 A
BATT CHG 100A
REC
BATTERY SW
HOPP HTR CB
CB LTS
FUSE TEST LT
CB CONT
CB LOC CN
SIDEW HTR
MV OS
CAB HTR
TRB LUBE P
AUX GEN
ALT FLD
LT NO PWR
LT TRB LUBE
FUEL P
SIG LT
R HDLT
F HDLT
(805) CB CONT
(512) CB LTS
BN STRING
PL STRING
NL STRING
(325) BP STRING
(316) BN STRING
LIGHTS
30 A
DROP LT
REC 74 V
W COOL
GA LT SW
RADIO
HOOD LT SW
CAB LT
F NO LT SW
R NO LT SW
F CL LT SW
R CL LT SW
EN RM LT SW
PLAT LT SW
GRD LT
CTLR LT
SP REC LT
W COOLER
GA LT
AMM LT
CNTR STD LT
F NO LT
HOOD LT
PLAT LT
F CL LT
EN RM LT
WALK LT
74 V REC
R NO LT
R CL LT
3003 ONLY
ALL EXCEPT 3003
LAMP TEST
FUSE TEST
TURBO AUX LUBE PUMP
TURBO AUX PUMP
ENG STOP
NO PWR
A T C
CAB HTR
SPEED REC
ENGR'S HEATER
F NO LT
R NO LT
F CL LT
R CL LT
EN RM LT
PLAT LT
REC 74 V

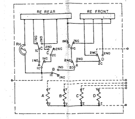

TB20
NL
RR
CR
NR
BN
DB
BD
RSS
NA
22
23
7
21
20
F

WIRE & CABLE						
SYM	CABLE SIZE		DIAMETER(IN)		TYPE OF INSULATION	PART NO
	AWG or CM	STRANDS	OUTSIDE	INSIDE		
I	12 AWG	19/.0179	.240	.095	R H & N	8126650
II	14,800 CM	37/.0201	.305	.148	R H & N	8126651
III	36400 CM	91/.0201	.430	.232	R H & N	8126652
IV	50000 CM	125/.0201	.498	.300	R H & N	8126653
VI	211600 CM	2107/.010	.845	.640	NEOPRENE	8085152
VII	26200 CM	133/.0141	.415	.212	AVA	8075665
X	14 AWG	19/.0147	.192	.073	R H & N	8121798
XI	444400 CM	1100/.0201	1.205	.916	R H & N	8126656
XII	220000 CM	550/.0201	.883	.654	R H & N	8126655
XIV	313900	775/.0201	1.09	.761	R H & N	8206658
XV	14 AWG	19/.0147	.160	.073	R H & N	8236533
XVII	12 AWG	19/.0179	.180	.095	R H & N	8238757
XX	535000 CM	1325/.0201	1.37	.970	R H & N	8179322
14H	14 AWG	19/.0142	.150	.076	S R G & D	8278231
12H	12 AWG	19/.0179	.210	.095	S R G & D	8292312
16T	16 AWG	19/.0113	.090	.063	TEFLON	8269142
W2	14 2 COND	41/.010	.530		RUBBER	8077433
J3	14 3 COND	41/.010	.600	.082	NEOPRENE	8183415
IX	130 MCM	325/.0201	.725	.485	R H & N	8126654
C2	16 2 COND	65/34	.410	.059	NEOPRENE	8077432
T2	16 2 COND	19/29	.390	.063	S R	8324121
T3	16 3 COND	19/29		.063	S R	8324122

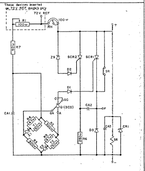

D-14 ALT
AL1
AL2
AL3
AL4
AL5
AL6
6C1
6C2
6C3
AL41
AL51
AC1
AC2
AC3
A11
A12
A13
A21
A22
A23
A31
A32
A33
RBL #1
RBL #2
RBL #3
T1
T2
T3
FILTER BLOWER
3AL8
3AL9
3AL10
BATT FLD 60A
AL20
AL10
AL30
AL32
BFFB
BFFA
BFA
FMG
FMB
FMF
FMD
FMF1
FMD1
FM1
FM2
FM3
15 Ω
AL30
AL31
AL32
FMB1
FMG1
FMC
FME
FMH
FMC1
FME1
FMH1
CR20
CR21
BFN3
BFP3
BLK
RED
BFN2
RE75 2 Ω
SFK
SFT
BFP2
BFN1
BFN
3BR5
MAIN GEN BATT FLD
BFP
3BL5
BFP1
AL11
AL15
NVR
WST 14
W1A
W1A1
RE6A 35 Ω
AL32
AL34
AL36
ALJ
WSB
CR1
CR22*
JC
JD
AC1
AC2
AL34
AL35
RE14C 250 Ω
JT
WSA1
WS
WSB2
P3
P3A
WSA
WSR
WSR1
RE14B 400 Ω
JP
WCR
WSB1
CR2
AL35
AL36
AL11
AL12
AL13
AL14
WST 23
W2A
W2A1
RE6B 35 Ω
AL37
GVT A
GVT B
GVT
T1
X1
X2
AL38
MGT A
MGT B
MGT
T2




RV2 27
SV2 26
24T2 24
SA2 23
CC2 22
BG2 21
BW2 20
AV2 15
14T2 14
BV2 12
11T2 11
WS2 10
CV2 7
5T2 5
DV2 3
SG2 2
1T2 1
X PIN
XB2 25
M2 19
P2 18
B2 17
ER2 16
PC2 13
RE2 9
FO2 8
GF2 6
N2 4
PIN
27 PT REC
RS
RSS1
RSS8
CL
CR20
NL22
N
NR20
NL20
2½"
IV
I
12H
A11
A12
A13
A21
A22
A23
A31
A32
A33
RSS
NA
CR7
NR7
RR7
NL7
BD7
DB7
BN7
2"
RBL 1
RBL 2
RBL 3
TB20
DB20
BN20
BD20
BN21
HDLT
RR
NL
P
MV RS
RSS1
NA1
NR21
NL21
CR21
NL23
14H
TM 4
FF
F
AA
A
FF4
F4
AA4
A4
(RVR4)
(S24)
(BKP2)

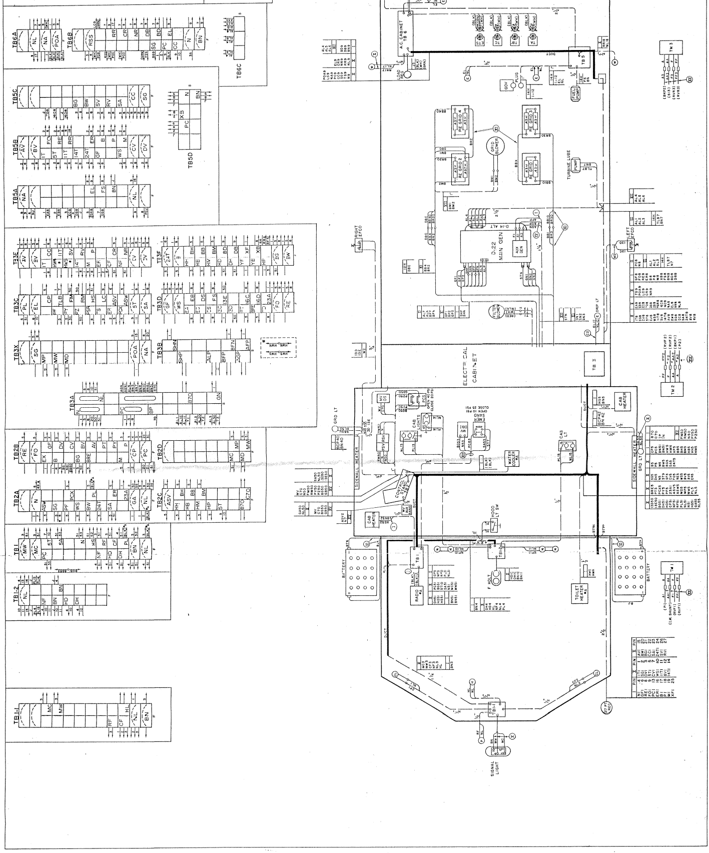

RE REAR
RE FRONT
RH
1NC
1NO
1C
2NC
2NO
2C
A
B
C
D
Y
Z

THROTTLE RESPONSE PANEL

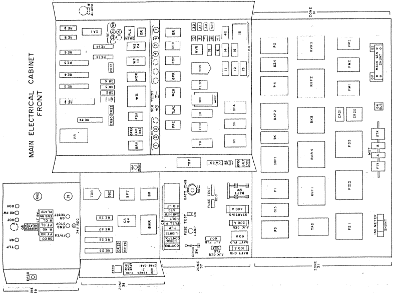

These devices inserted on 72V REF models only
72V REF
R1
100 Ω
RH
100 Ω
R7
50 Ω
Z9
SCR2
SCR1
D2
D1
SR
C
GC
Q1(SCS)
GA
A
CA1
CA2
OF
R4 47 Ω
T1 50 Ω
R2 300 Ω
Z1
R3 300 Ω
R5 47 Ω
T2 50 Ω
Z2
R6 250 Ω
D3
CA3
CR1
SR
+
−

T1,T2 - THERMISTORS
Z1,Z2 - 26V ZENERS

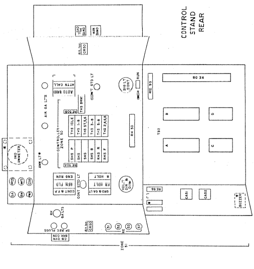
VOLTAGE REGULATOR

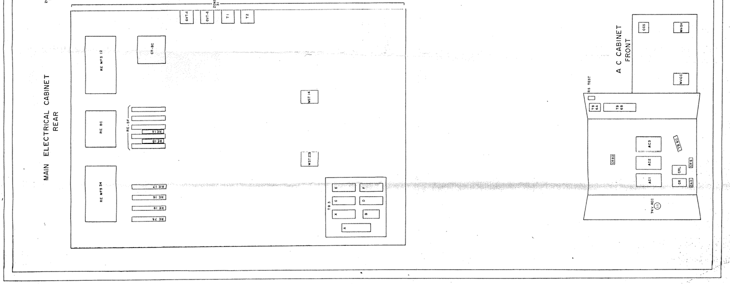

TB6A
TB6B
TB6C
TB5A
TB5B
TB5C
TB5D
TB3A
TB3B
TB3C
TB3D
TB3E
TB3F
TB3X
TB2A
TB2B
TB2C
TB2D
TB1
TB1-1
TB1-2
A.C. CABINET TB 6
TB 5
GRID BLOWER
RE GRID 1
RE GRID 2
RE GRID 3
RE GRID 4
TURBINE LUBE PUMP
FUEL PUMP
D-22 MAIN GEN
AUX GEN
D-14 ALT
FILTER BLOWER
RIGHT EFCO
LEFT EFCO
ELECTRICAL CABINET
TB 3
TM 2
TM 3
TM 1
GRD LT
SIDEWALL HEATER
CAB HEATER
CAB LIGHTS
CAB LT
WATER COOLER
CONTROL STAND TB 50
HOOD LT SW
BATTERY
RADIO
F HDLT
TOILET HEATER
DUCT
SIGNAL LIGHT
SAND EMER OPEN 10 PSI CLOSE 25 PSI
PCS OPEN 40 PSI CLOSE 20 PSI

MAIN ELECTRICAL CABINET FRONT


ZONE 34
ZONE 31
ZONE 37
ZONE 38
ZONE 39
ALARM
VR
RE 39
RE 1
RE 2
RE 3
RE 4
RE 5
RE 6
RE 8
RE 25
RE 26
RE 27
RE 28
BWR
TDR
SFT
BR
TRP
P1
P2
P3
P4
BK
BKP1
BKP2
BKB
RVR3
RVR4
RVF1
RVF2
FM1
FM2
FM3
FS1
FS2
FS3
TPS
S13
S24
SHUNT
IND METER
MAIN GEN SHUNT
BATT CHG
FUSE TEST
STARTING 400 A
AUX GEN 200 A
ALT FLD 60 A
BATT CHG 100 A
EFCO

CONTROL STAND REAR


ZONE 50
ZONE 51
CONTROLLER ZONE 50
IND AMMETER
AIR GA LTS
ATTN CALL
AUTO BAND
CONT STD LT
SIG LT CONT
RUN
RE 99
RE 98
RH 50
RE 50A
TB2
A
B
C
D
GEN FLD
ENG RUN
CONT & F P
R HDLT
F HDLT
GROUND DEVICE
HDLT DIM
BUZZER
CAS1
CAS2
RE 56


MAIN ELECTRICAL CABINET
REAR
ZONE
31
GVT-I
GVT-II
T1
T2
RE MFS 12
CR-BC
RE BC
RE-SF
RE 1A
RE 1B
RE MFS 34
RE 17
RE 16
RE 19
RE 75
WST 14
WST 23
TB 3
E
F
C
D
X
B
A
A C CABINET
FRONT
RS TEST
CCS
MV-SH
MV-CC
TB
6A
TB
6B
CRB2
AC3
AC2
AC1
TB 6C
CR6
CRL
CR
CA11
74V REC