

## 附 属 資 料

### ⑥ 参 考 資 料

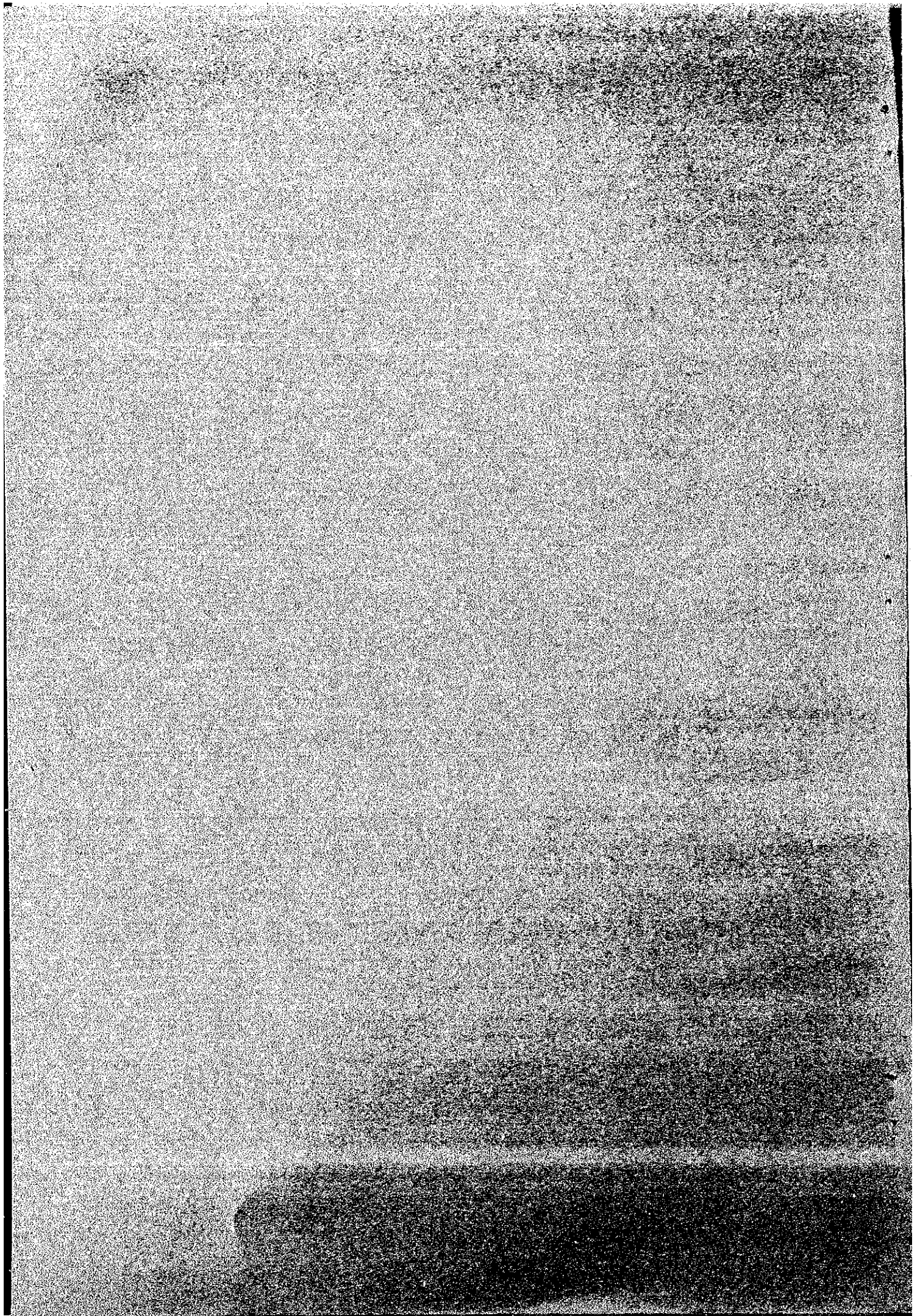
#### 1. PASER REBO BLK校 工業電子科現カリキュラム

1. 基礎(BASIC)コース用
2. 中級(INTERMEDIATE)コース用
3. 上級(UP GRADING)コース用

#### 2. 労働省より指示されている標準カリキュラム

1. 基礎(BASIC)コース用
2. 中級(INTERMEDIATE)コース用
3. 上級(ADVANCE)コース用

#### 3. 工業電子科 供与機材リスト



## (1) 基礎 (BASIC) コース用

KURIKULUM : ELEKTRONIKA INDUSTRI

TINGKAT : BASIC ( DASAR )

NO.	MATA LATIHAN	JAM LATIHAN			
		PT	KK	JUMLAH:	KETERANGAN
A.	INSTITUSIONAL :				1 Jam Per 45 menit PT: Penge huan kait. KK: Kompe si Ke
	1. Kelompok Umum :				
	- Attitude dan pengembangan				
	1.1. P.4	17	-	17	
	1.2. Fisik, Mental, Disiplin	-	57	57	
	1.3. Motivasi Kerja	8	-	8	
	1.4. Hubungan Kerja	8	-	8	
	Sub Jumlah :	33	57	90	
	2. Kelompok Teknis :				
	2.1. Matematik I	24	-	24	
	2.2. Pengetahuan Alat & Bahan	14	30	44	
	2.3. Teknik Listrik I	20	30	50	
	2.4. Teknik Elektronika I	20	44	64	
2.5. Pengukuran Listrik dan Elektronika I	28	62	90		
2.6. Peralatan Listrik dan Elektronika I	40	110	150		
2.7. Teknik Digital I	20	60	80		
2.8. Teknik Pengaturan I	16	40	56		
2.9. Perangkat Keras Komputer	20	50	70		
Sub Jumlah :	202	426	628		
3. Kelompok Penunjang :					
3.1. Bahasa Inggris	40	-	40		
3.2. Keselamatan dan Kesehatan Kerja	18	-	18		
3.3. Kewiraswastaan	24	-	24		
Sub Jumlah :	82	-	82		
4. Extra Kurikuler :					
4.1. Test Akhir	16	24	40		
JUMLAH A :	333	507	840		
B.	Praktek Kerja	-	120	120	
	JUMLAH A + B :	333	627	960	

Mengetahui,  
Kepala Balai Latihan Kerja,

Drs. MUDJI SANTOSO  
NIP.160010001.

Jakarta, 10 - 1 - 1995.  
Kajur. Elektronika,

S U H A R T O  
NIP.160013689.

## (2) 中級 (INTERMEDIATE) コース用

KURIKULUM : ELEKTRONIKA INDUSTRI

TINGKAT : INTERMEDIATE (MENENGAH)

NO.	MATA LATIHAN	JAM LATIHAN			KETERANGAN
		PT	KK	JUMLAH	
A.	INSTITUSIONAL :				I. Jam Pel: 45 menit. PT: Pengetahuan Terkait. KK: Kompetensi Kerja
	1. Kelompok Umum :				
	- Attitude dan pengembangan				
	1.1. P.4	17	-	17	
	1.2. Fisik, Mental, Disiplin	-	57	57	
	1.3. Motivasi Kerja	8	-	8	
	1.4. Hubungan Kerja	8	-	8	
	Sub Jumlah :	33	57	90	
	2. Kelompok Teknis.:				
	2.1. Matematik II	20	-	20	
	2.2. Pengetahuan Alat & Bahan	20	-	20	
	2.3. Teknik Listrik II	15	30	45	
	2.4. Teknik Elektronika II	20	50	70	
	2.5. Pengukuran Listrik dan Elektronika II	20	40	60	
2.6. Peralatan Listrik dan Elektronika II	35	70	105		
2.7. Elektronika Komputer I	25	40	65		
2.8. Hidrolik dan Pneumatik	15	25	40		
2.9. Teknik Produksi I	15	-	15		
2.10. T. Komunikasi Komputer I	15	30	45		
2.11. Perangkat Keras Komp. I	15	60	75		
2.12. Teknik Pemeliharaan I	12	20	32		
2.13. Teknik Pengaturan II	20	40	60		
Sub Jumlah :	247	405	652		
3. Kelompok Penunjang :					
3.1. Bahasa Inggris	24	-	24		
3.2. Keselamatan dan Kesehatan Kerja	18	-	18		
3.3. Kewiraswastaan	24	-	24		
Sub Jumlah :	66	-	66		
4. Extra Kurikuler :					
4.1. Test Akhir	16	16	32		
JUMLAH A :	362	478	840		
B.	Praktek Kerja	-	120	120	
JUMLAH A + B :	333	627	960		

Mengetahui,  
Kepala Balai Latihan Kerja,

Jakarta, 10 -1 -1995.  
Kajur. Elektronika,

Drs. UDJI SANTOSO

SUHARTO

SUB KEJURUAN : ELEKTRONIKA INDUSTRI

NO.	MATA PELATIHAN	JAM LATIHAN			KETERANGAN
		PT	KK	JUMLAH:	
A.	INSTITUSIONAL :				
1.	Kelompok Umum :				1 Jam Pel:
	1.1. P.4.	24	-	24	45 menit.
	1.2. Fisik Mental, Disiplin	-	57	57	
	1.3. Kebijakan Depnaker (Sesuai kebutuhan)	33	-	33	PT:Pengetahuan Terkait.
	Sub Jumlah :	57	57	114	KK:Kompetensi Kerja
2.	Kelompok Inti :				
	2.1. Methodologie Instruksional (Sesuai kebutuhan)	100	-	100	
	2.2.				
	2.3.				
	Sub Jumlah :	100	-	100	
3.	Kelompok Tehnis :				
	3.1. Matematik	20	-	20	
	3.2. Pengetahuan alat dan bahan	20	-	20	
	3.3. Tehnik Listrik	20	30	50	
	3.4. Tehnik Elektronika	20	50	70	
	3.5. Peng. Listrik & Elektronika	20	50	70	
	3.6. Peralatan Listrik dan Elektronika	30	75	105	
	3.7. Elektronika Komputer	25	40	65	
	3.8. Hidrolic dan Phenumatic	20	30	50	
	3.9. Tehnik Produksi	20	-	20	
	3.10. Tehnik Komunikasi Komputer	20	35	55	
	3.11. Perangkat keras Komputer	15	60	75	
	3.12. Tehnik Pemeliharaan	17	23	40	
	3.13. Tehnik Pengaturan	20	40	60	
	Sub Jumlah :	267	433	700	
4.	Kelompok Penunjang				
	4.1. .... (Sesuai Kebutuhan)	30	-	30	
	Sub Jumlah :	30	-	30	
5.	Ekstra Kurikuler				
	5.1. Kunjungan ke Perusahaan	-	10	10	
	5.2. Seminar	-	15	15	
	Sub Jumlah :	-	25	25	
	Jumlah Kel. : A	454	515	969	
B.	LATIHAN DI TEMPAT KERJA	-	120	120	
C.	UJIAN AKHIR	20	16	36	
	JUMLAH A + B + C :	474	651	1125	

MENGETAHUI  
PALA BALAI LATIHAN KERJA,

Drs. MUJI MANTOSO

Jakarta, 9 Januari 1995  
KAJUR ELEKTRONIKA,

S U H A R T O

2. 労働省より指示されている標準カリキュラム

(1) 基礎 (BASIC) コース用

GRADE: INDUSTRIAL ELECTRONICS

TOTAL: 960 HOURS

GRADE: I (BASIC)

C U R R I C U L U M		H O U R S		
N O	S U B J E C T	T H E O R I	F I E L D T R A I N I N G	T O T A L
01	Mathematics - I .....	35		35
02	Physics - I .....	35		35
03	Electrical Engineering - I .....	35	60	95
04	Electronics Engineering - I .....	35	75	110
05	Electrical Measurement - I .....	30	60	90
06	Electronics Measurement - I .....	30	75	105
07	Electronics Components .....	25		25
08	Electrical Machines - I .....	35	70	105
09	Digital Techniques - I .....	35	80	115
10	Automatic Control Engineering I	35	80	115
11	Computer Hardware Technology - I	35	80	115
12	Safety & Maintenance Techniques I	15		15
T O T A L .....		380	580	960

CURRICULUM BY TRAINING COURSE

(2) 中級 (INTERMEDIATE) コース用

CURRICULUM BY TRAINING COURSE

TRADE: INDUSTRIAL ELECTRONICS

TOTAL: 960 HOURS

GRADE: II (INTERMEDIATE)

C U R R I C U L U M		H O U R S		
NO	S U B J E C T	THEORI	FIELD TRAINING	TOTAL
01	Mathematics - II .....	30		30
02	Physics - II .....	30		30
03	Electrical Engineering - II .....	25	50	75
04	Electronics Engineering - II .....	30	60	90
05	Electrical Measurement - II .....	25	60	85
06	Electronics Measurement - II .....	30	60	90
07	Digital Techniques - II .....	35	60	95
10	Electrical Machines - II .....	25	50	75
08	Automatic Control Engineering II	30	60	90
09	Electronics Computer - I .....	30	50	80
10	Production Techniques - I .....	25		25
11	Computer Communic. Techniques I	25	50	75
12	Computer Hardware Technology - II	25	80	105
13	Safety & Maintenance Techniques I	15		15
T O T A L .....		380	580	960

(3) 上級 (ADVANCE) コース用

CURRICULUM BY TRAINING COURSE

TRADE: INDUSTRIAL ELECTRONICS

TOTAL: 960 HOURS

GRADE: III (ADVANCE)

CURRICULUM		HOURS		
NO	SUBJECT	THEORI	FIELD TRAINING	TOTAL
01	Mathematics - III .....	30		30
02	Physics - III .....	30		30
03	Electrical Engineering - III .....	25	50	75
04	Electronics Engineering - III .....	30	60	90
05	Electrical Measurement - III .....	25	50	75
06	Electronics Measurement - III .....	30	70	100
07	Digital Techniques - III .....	35	60	95
08	Electrical Machines - III .....	25	50	75
09	Automatic Control Engineering III	30	60	90
10	Electronics Computer - II .....	30	50	80
11	Production Techniques - II .....	25		25
12	Computer Communic. Techniques II	25	50	75
13	Computer Hardware Technology III	25	80	105
14 15 K	Safety & Maintenance Techniq. III	15		15
T O T A L .....		380	580	960

CURRICULUM BY TRAINING COURSE

SUB-TRADE: SEQUENCE CONTROL



3. 工業電子科供与機材リスト

THE PROJECT FOR THE DEVELOPMENT OF VOCATIONAL TRAINING EQUIPMENT IN INDONESIA  
 UTILITY LIST FOR EQUIPMENTS OF PASAR REBO VOCATIONAL TRAINING CENTER

英 E: Electric power W: Water Supply D: Drainage G: Gas Ai: Compressed Air Ex: Exhaust F: Foundation is required or not

Code No.	Description	Maker	Model	Qty	Dimensions W x D x H (mm)	Weight (kg)	E (kw)			D	G	Ai	Ex	F	Others
							1 φ	3 φ	P						
E-01	Industrial Electronics and Instrumentation Course														
E-01	AI Control Trainer	MEGACHEM	MSU781210.301.32	1	1,000 x 600 x 800										
E-02	Inverter Motor Control Unit	SHOWA DENGYO	KENTAC 3303V	4	520 x 380 x 100	15	0.2								
E-03	Programmable Controller	RS-ENGINEER	731-01	10	135 x 81 x 63	1									
E-04	Robotic Trainer	MESACHEM-TO	MA2000	1											
E-05	Positioning Control Unit	SHOWA DENGYO	KENTAC 848	2	550 x 400 x 100	25	0.2								
E-06	DC Servo Unit	LEYBOLD	TPS8 4.1	4	100 x 120 x 40	0.3	0.2								
E-07	Electronic Circuit Trainer	LEYBOLD	STF6.1.1V8.1.6	4	300 x 298 x 40	0.3	0.1								
E-08	Logic Circuit Trainer	LEYBOLD	SIM5.1.1/2	8	300 x 200 x 24	0.5	0.22								
E-09	Pulse Circuit Trainer	SHOWA DENGYO	KENTAC 2700	8	570 x 80 x 400	3	0.22								
E-10	Semiconductor Train	IWATSU ELEC.	TF-05	8	240 x 80 x 20	2	0.01								
E-11	Electronic Counter Trainer	IWATSU ELEC.	TF-06	8	450 x 80 x 300	6	0.01								
E-12	IC Troubleshooting Kit	YIP	HP-5022A	3	300 x 150 x 60	3	0.01								
E-13	Oscilloscope and Probe	KENWOOD	SS-4035	8	250 x 380 x 150	7	0.05								
E-14	Pulse Generator	IWATSU ELEC.	PG-250	8	210 x 350 x 100	3	0.03								
E-15	Function Generator	KENWOOD	FG-270	8	240 x 190 x 64	2	0.03								
E-16	Digital Multimeter	KENWOOD	DM-712	8	170 x 130 x 60	0.6	0.01								
E-17	Circuit Tester	SANWA ELEC.	EM-3000	6	180 x 120 x 70	0.2									
E-18	Digital Tester	SANWA ELEC.	XD-760CA	8	164 x 85 x 43	0.4									
E-19	Universal Counter	KENWOOD CORP.	FC-757	8	240 x 190 x 64	1.8	0.5								
E-20	DC Ampere Meter (A)	YOKOGAWA ELEC.	2011-37	8	185 x 170 x 87	2									
E-21	DC Ampere Meter (B)	YOKOGAWA ELEC.	2011-36	8	185 x 170 x 87	2									
E-22	DC Volt Meter (A)	YOKOGAWA ELEC.	2011-40	8	185 x 170 x 87	2									
E-23	DC Volt Meter (B)	YOKOGAWA ELEC.	2011-13	8	185 x 170 x 87	2									
E-24	AC Volt Meter (A)	YOKOGAWA ELEC.	2013-19	8	195 x 170 x 87	2									
E-25	AC Volt Meter (B)	YOKOGAWA ELEC.	2013-03	3	195 x 170 x 87	2									
E-26	Power Meter (A)	YOKOGAWA ELEC.	2042-032261-01	4	260 x 160 x 136	2									
E-27	Power Meter (B)	YOKOGAWA ELEC.	2041-02	4	230 x 160 x 130	2									
E-28	Frequency Counter	YOKOGAWA ELEC.	FS-763	2	260 x 210 x 70	2									
E-29	AC Resistance Volt Meter	KENWOOD CORP.	VT-173	10	138 x 263 x 212	3.2	0.01								
E-30	Sensitive ME Volt Meter	KENWOOD CORP.	VT-172	2	138 x 315 x 214	5	0.02								
E-31	ME Volt Meter	KENWOOD CORP.	VT-176	2	138 x 263 x 212	3.2	0.01								

3. 工業電子科供与機材リスト

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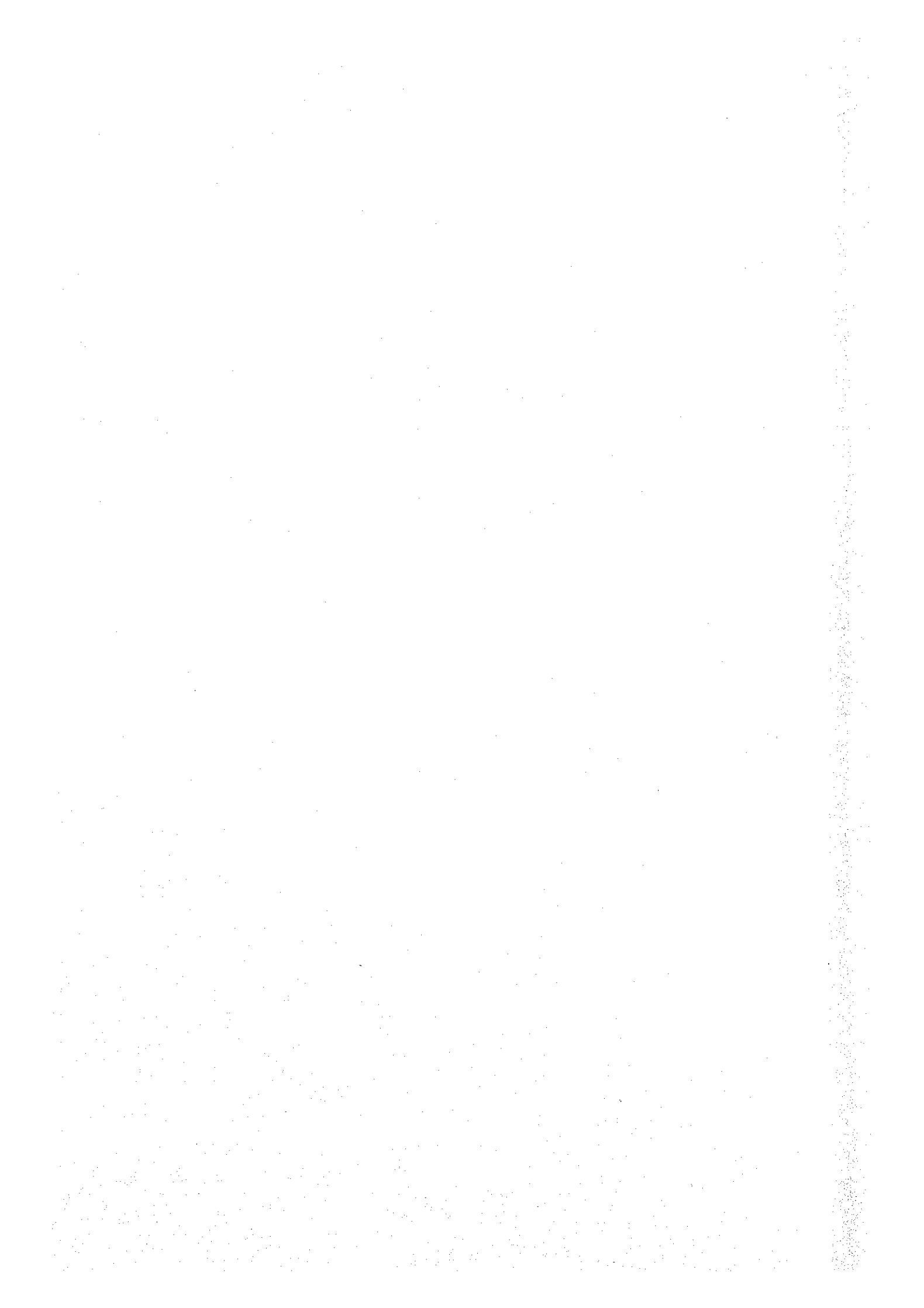
1311. PROJECT FOR THE IMPROVEMENT OF PASARREBO VOCATIONAL TRAINING CENTER EQUIPMENT IN INDONESIA  
UTILITY LIST FOR EQUIPMENTS OF PASARREBO VOCATIONAL TRAINING CENTER

※ E: Electric Power W: Water Supply D: Drainage G: Gas A: Compressed Air Ex: Exhaust F: Foundation is required or not

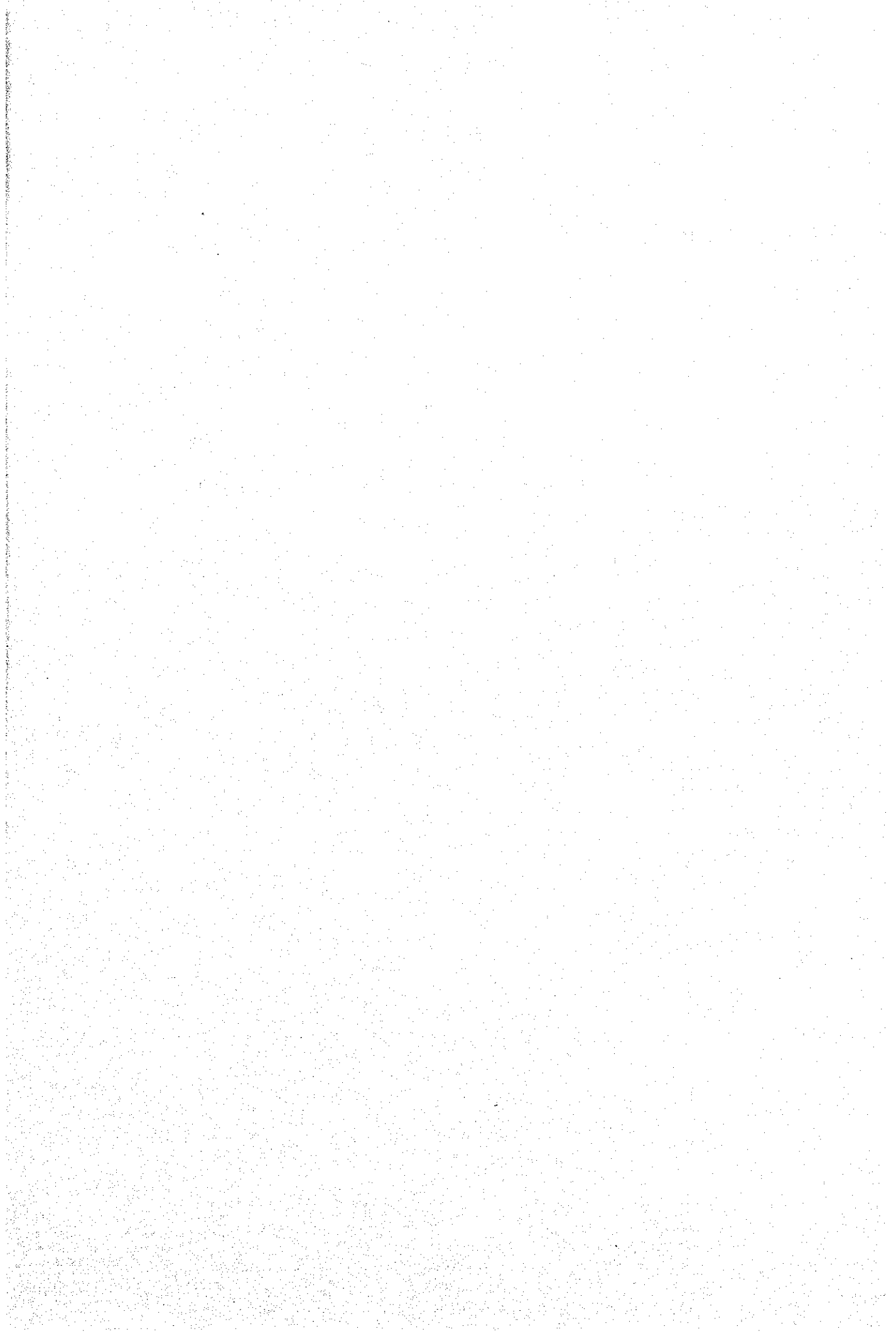
Code No.	Description	Maker	Model	Qty	Dimensions W x D x H (mm)	Weight (kg)	E (kv)			Others
							To	3φ	P	
E-20	Emergency Storage	KENWOOD CORP.	281	4	165 x 155 x 85					
E-20	Emergency Storage	YOKOGAWA ELEC.	183K18	4						
E-21	PCB Assembly Tools	KIUCHI	LC-204 etc.	20	30 x 30 x 10	0.5				
E-22	Exhaust Fan	SUPRAYATO	S-920 etc.	2	1,200 x 900 x 1,600	160	1.2			
E-23	PCB Board	SUPRAYATO	TEST Kit etc.	2	600 x 600 x 800	60				
E-24	Parts	SUPRAYATO	TL-360	1	1,200 x 500 x 600	40				
E-25	Parabolic Electric Dish	HITACHI-KODI	D-6C	2	201 x 100 x 180	5	0.25			
E-26-1	DC Power Supply (A)	KIKUSUI	PAS-B-5	2	138 x 230 x 147	8	0.2			
E-26-2	DC Power Supply (B)	KIKUSUI	PAD-90A	2	147 x 365 x 162	10	0.4			
E-26-3	DC Power Supply (C)	KIKUSUI	PAS-18-Z100	2	110 x 350 x 165	12	0.5			
E-27	DC Power Supply (D)	KIKUSUI	PAS-B-5.5	2	113 x 250 x 150	6	0.3			
E-28	DC Power Supply (E)	KIKUSUI	PAC-160-2L	4	230 x 110 x 160	8	0.3			
E-29	Voltage Stabilizer	YAMABISHI	ACE-1K	5	160 x 250 x 170	10				
E-30	Substation Power Line	HOZAN	H-5.5	20	150 x 30 x 30	0.05	0.05			
E-31	Substation	HOZAN	HS-600	2	170 x 170 x 220	3	0.2			
E-32-1	Panel Cabinet	HOZAN	B-200	5	882 x 325 x 600	43				
E-32-2	Tool Cabinet	HOZAN	B-201	5	882 x 325 x 600	41				
E-33	Tool Set	HOZAN	S-10	20	220 x 185 x 40	0	0.65			
E-34	Cabinet Miter	YOKOGAWA ELEC.	2128	2	113 x 105 x 48	0.5				
E-35	Standard Unit	YOKOGAWA ELEC.	2145	1	104 x 147 x	1				
E-36	Welding Machine Body	YOKOGAWA ELEC.	2155-87	2	182 x 226 x 120	2				
E-37	Asynchronous Regulator	YOKOGAWA ELEC.	2195-10	2	115 x 497 x 130	2				
E-38	Automatic Control	LEADER	LCR-749	2	240 x 170 x 95	2	0.2			
E-39	Personal Computer	FORENDO	DK-J0501	10			0.21			
E-50-1	Printer (Type A)	HEVLET PAGARD	4L	1	590 x 400 x 140	0	0.3			
E-50-2	Printer (Type B)	PANASONIC	RP-1695	4	550 x 400 x 140	0	0.1			
E-51-1	X-Y Plotter (Pen Plotting Type)	GRAFTEC	MR3000	1	670 x 450 x 130	8	0.1			
E-51-2	X-Y Plotter (Paper Plotting Type)	HITACHI	HG-750	1	550 x 140 x 220	6	0.25			
E-52-1	Schematic (Schematic Design)	INTELLIGENT SYSTEM	IC-CAD S01	8						
E-52-2	Schematic (Digital Simulation Tools)	INTELLIGENT SYSTEM	IC-CAD YST	1						
E-52-3	Schematic (Programmable Logic Device Design)	INTELLIGENT SYSTEM	IC-CAD PLD	1						
E-52-4	Schematic (PC Boards Tools)	INTELLIGENT SYSTEM	IC-CAD PCB	1						
E-52-5	Schematic (Printed Circuit Board Layout Tools)	INTELLIGENT SYSTEM	IC-CAD PCB	4						
E-52-6	Schematic (PC Boards Tools)	SPRINT	Trace C for Windows	5						











JICA