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APPENDICES

APPENDIX A

Appendix A: BILL OF MATERIAL DEFLECTION YOKE SIZE 14"

NO	DY DESCRIPTION	UNIT	QUANTITY / DY																							
			DY MODEL																							
			01	02	03	04	05	06	07	08	09	10	11	12	14	15	16	20	21	24	26	29	30	36	44	55	63
	FOR ASSEMBLY																									
1	CORE-FERRITE	PR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	T- PLATE	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	MAG-PLATE (412D029-1)	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	TERMINAL-BOARD	PC	1	1	1	1	1	-	-	-	-	-	1	1	1	1	-	-	1	1	-	-	-	-	-	-
4	TERMINAL-LEAD	PC	-	-	-	-	-	1	1	1	1	1	-	-	-	-	1	1	-	-	1	1	1	1	1	1
6	CORE-CRIP	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	NECKBAND	PC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	PLASTIC-SEPERATOR	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	FOR INSPECTION																									
9	MAG-PLATE	PC	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333
10	MAGNETIC-PIECE-PLATE-YH	PC	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333	0.333
11	MAGNET 461D017-1	PC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	FERRITE SHEET	PC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	OTHERS																									
13	ENAMEL WIRE	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	SOLDER-INGOT	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15	ACETATE TAPE	M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	VINYL-TAPE-UL	M	-	-	-	-	-	X	X	X	X	X	-	-	-	-	X	X	-	-	X	X	X	X	X	X
17	HEAT-SHRINK TUBE	M	-	-	-	-	-	X	X	X	X	X	-	-	-	-	X	X	-	-	X	X	X	X	X	X
18	HOT-MELT-ADHESIVE	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
19	DIABOND	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NOTE: X = used to produce but not identify the quantity, - = not used to produce

Appendix A: BILL OF MATERIAL DEFLECTION YOKE SIZE 20"

NO	DY DESCRIPTION	UNIT	QUANTITY / DY																												
			DY MODEL																												
			01	02	03	04	05	06	07	08	09	11	12	13	14	16	17	18	19	23	29	30	31	37	38	43	46	48	63	66	83	86
	FOR ASSEMBLY																														
1	CORE-FERRITE	PR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
2	PLATE-RE	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	TERMINAL-BOARD	PC	1	1	1	1	1	-	-	-	-	1	1	1	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
4	TERMINAL-LEAD	PC	-	-	-	-	-	1	1	1	1	-	-	-	-	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1
5	MAGNET 461D045-1	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	CORE-CRIP	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	NECKBAND	PC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	PLASTIC-SEPERATOR	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	FOR INSPECTION																														
9	MAG-PLATE	PC	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
10	MAGNETIC-PIECE-PLATE-YH	PC	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
11	MAGNET 461D017-1	PC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	FERRITE SHEET	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	OTHERS																														
13	ENAMEL WIRE	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	SOLDER-INGOT	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15	ACETATE TAPE	M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	VINYL-TAPE-UL	M	-	-	-	-	-	X	X	X	X	-	-	-	-	X	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	X
17	HEAT-SHRINK TUBE	M	-	-	-	-	-	X	X	X	X	-	-	-	-	X	X	X	X	-	X	X	X	X	X	X	X	X	X	X	X	X
18	HOT-MELT-ADHESIVE	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
19	DIABOND	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NOTE: X = used to produce but not identify the quantity, - = not used to produce

Appendix A: BILL OF MATERIAL DEFLECTION YOK.. SIZE 21"

NO	DY DESCRIPTION	UNIT	QUANTITY / DY																		
			DY MODEL																		
			01	02	03	04	05	06	07	08	09	10	11	12	15	17	20	22	23	45	50	70
	FOR ASSEMBLY																				
1	CORE-FERRITE	PR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	PLATE-RE	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	TERMINAL-BOARD	PC	1	1	1	1	1	-	-	-	-	-	1	1	-	-	-	1	1	-	-	-
4	TERMINAL-LEAD	PC	-	-	-	-	-	1	1	1	1	1	-	-	1	1	1	-	-	1	1	1
5	MAGNET 461D046-1	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	MAGNET 461D047-2	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
6	CORE-CRIP	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
7	NECKBAND	PC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	PLASTIC-SEPERATOR	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	FOR INSPECTION																				
9	MAG-PLATE	PC	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
10	MAGNETIC-PIECE-PLATE-YI	PC	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
11	MAGNET·461D017-1	PC	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12	FERRITE SHEET	PC	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	OTHERS																				
13	ENAMEL WIRE	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	SOLDER-INGOT	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
15	ACETATE TAPE	M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	VINYL-TAPE-UL	M	-	-	-	-	-	X	X	X	X	X	-	-	X	X	X	-	-	X	X	X
17	HEAT-SHRINK TUBE	M	-	-	-	-	-	X	X	X	X	X	-	-	X	X	X	-	-	X	X	X
18	HOT-MELT-ADHESIVE	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
19	DIABOND	KG	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NOTE: X = used to produce but not identify the quantity, - = not used to produce

APPENDIX B

Process Maping of Deflection yoke product size1

NO	Process	Deflection yoke product size14"																							
		01	02	03	04	05	06	07	08	09	10	11	12	14	15	16	20	21	24	26	29	30	36	44	55	63
1	H-coil winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	V-coil winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	H-coil taping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4	H-coil peeling off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	Check Air-L																									
6	H-coil assembling with seperators	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	T-plate/ plate-re attaching	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	Magnetic plate attaching	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
9	V-coil assembling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	Lead/board terminal assembling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11	Neckband attaching	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	H-coil terminal winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13	V-coil teminal winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	Lead wire taping						X	X	X	X	X					X	X			X	X	X	X	X	X	X
15	Label attaching	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	Soldering	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
17	Check withstand voltage	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18	Magnets assembling																									
19	Heat shrinking tube attaching						X	X	X	X	X					X	X			X	X	X	X	X	X	X
20	Crosstalk adjustment & Hot melt fixing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
21	Inspection	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22	Bonding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23	Packing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Process Maping of Deflection yoke product size

NO	Process	Deflection yoke product size 20"																													
		01	02	03	04	05	06	07	08	09	11	12	13	14	16	17	18	19	23	29	30	31	37	38	43	46	48	63	66	83	86
1	H-coil winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	V-coil winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	H-coil taping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4	H-coil peeling off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	Check Air-L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	H-coil assembling with seperators	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	T-plate/ plate-re attaching	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	Magnetic plate attaching																														
9	V-coil assembling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	Lead/board terminal assembling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11	Neckband attaching	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	H-coil terminal winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13	V-coil teminal winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	Lead wire taping						X	X	X	X					X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
15	Label attaching	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	Soldering	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
17	Check withstand voltage	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18	Magnets assembling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
19	Heat shrinking tube attaching						X	X	X	X					X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
20	fixing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
21	Inspection	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22	Bonding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23	Packing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Process Maping of Deflection yoke product size2

NO	Process	Deflection yoke product size21"																			
		01	02	03	04	05	06	07	08	09	10	11	12	15	17	20	22	23	45	50	70
1	H-coil winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	V-coil winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	H-coil taping	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4	H-coil peeling off	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
5	Check Air-L	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6	H-coil assembling with seperators	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7	T-plate/ plate-re attaching	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8	Magnetic plate attaching																				
9	V-coil assembling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
10	Lead/board terminal assembling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11	Neckband attaching	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
12	H-coil terminal winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
13	V-coil teminal winding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
14	Lead wire taping						X	X	X	X	X			X	X	X			X	X	X
15	Label attaching	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
16	Soldering	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
17	Check withstand voltage	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
18	Magnets assembling	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
19	Heat shrinking tube attaching						X	X	X	X	X			X	X	X			X	X	X
20	Crosstalk adjustment & Hot melt fixing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
21	Inspection	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22	Bonding	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
23	Packing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

APPENDIX C

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke OPERATION H-coil taping

SIZE: All sizes EQUIPMENT -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Move 60 piece H-coils from a tray to the table									-	23.12	D	60	INT	1.5m
20	Tape H-coil a half turnful on the upper part of bridging wire	X						-	5.59						
30	Group 12 piece H-coils and move them to the tray									-	7.9	S	12	INT	1.5m
			0.00	**0.00**				**0.00**	**5.59**	**0.00**	**31.02**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke OPERATION Peeling off

SIZE: All sizes EQUIPMENT Peeling machine

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Move H-coil group from the tray to the table and trim their tips		-	6.2	S	12	INT								
20	Peel off the H-coil by wire polisher	X						21.5	21.5						
30	Move the peeled H-coil to the tray									-	70.09	S	60	INT	1.5m
			0.00	**6.20**				**21.50**	**21.50**	**0.00**	**70.09**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke | OPERATION: Check AIR-L

SIZE: 20", 21" | EQUIPMENT: LCR Meter

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Move 60 piece H-coils from a tray to the table									-	14.11	D	60	INT	1m.
20	Insert two tips of H-coil wire into LCR meter and classify the coil according to its inductance value	X						4 6	4.6						
30	Arrange classified H-coils to the tray									-	50.01	D	60	INT	1m.
			0.00	**0.00**				**4.60**	**4.60**	**0.00**	**64.12**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke — OPERATION: H-coil assembling seperator

SIZE: All sizes — EQUIPMENT: -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Move H-coils from WIP area to a assembly line									-	120	S	300	INT	5m.
20	Bring H-coils up to the table and bond them with diabond adhesive		-	46.6	D	30	INT								
30	Attach two pieces of H-coils with seperator letting their hooks be coupled each other.	X						-	11.67						
			0.00	**46.60**				**0.00**	**11.67**	**0.00**	**120.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke OPERATION Magnetic plate assembling

SIZE: 14" EQUIPMENT -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Bond pins of the seperator	X						-	3.00						
20	Attach magnetic plates to the pins of the seperator and fix the plates by the acetate tape	X						-	8.20						
			0.00	**0.00**				**0.00**	**11.20**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke — OPERATION: V-coil assembling (Terminal lead)

SIZE: All sizes — EQUIPMENT: -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT.	DIST
10	Assembly two pieces of V-coils	X						-	6.40						
20	Assembly the terminal lead and attach and fastern the neckbamd on the seperator neck.	X						-	7.00						
			0.00	**0.00**				**0.00**	**13.40**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke OPERATION V-coil assembling (Terminal board)

SIZE: All sizes EQUIPMENT -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Assembly two pieces of V-coils	X						-	6.40						
20	Assembly the terminal board and attach and fastern the neckbamd on the seperator neck.	X						-	4.36						
			0.00	**0.00**				**0.00**	**10.76**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke

OPERATION H-coil terminal winding

SIZE: All sizes

EQUIPMENT -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Arrange the leads and wind two H-coil and one V-coil leads on the terminal.	X						-	13.28						
			0.00	**0.00**				**0.00**	**13.28**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke | OPERATION: V-coil terminal winding

SIZE: All sizes | EQUIPMENT: -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Wind two V-coil leads on the terminal, trim all excessive leads, and attach label on the sub-product DY	X							12.33						
			0.00	**0.00**				**0.00**	**12.33**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke | OPERATION: Soldering

SIZE: All sizes | EQUIPMENT: Soldering pot

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Check the wound leads on the terminals, dip the terminal with the fluc, and solder all terminals until meeting the acceptable brightness	X						10.5	10.5						
20	Clean the surface of the solder pot			10 0											
			0.00	**10.00**				**10.50**	**10.50**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke | OPERATION: Check withstand voltage

SIZE: All sizes | EQUIPMENT: Withstand voltage device

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Open the device cover and disconnect the checked DY and connect the new DY to the device and close the cover to start checking.							-	4.21						
20	Device test corona and inductance of the DY, and signal finishing test for acceptable DY.							9.00	-						
			0.00	**0.00**				**9.00**	**4.21**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke | OPERATION: Magnet attaching

SIZE: 20", 21" | EQUIPMENT: -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Insert two magnets to the seperator and fix them with the adhesive bond	X						-	5.35						
			0.00	**0.00**				**0.00**	**5.35**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke | OPERATION: Heat shrinking tube attaching

SIZE: All sizes | EQUIPMENT: -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Take the heat shrinking tube cover the red lead wire h-coil terminal, and shrink it by hot air blaster.	X							5.1						
			0.00	**0.00**				**0.00**	**5.10**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke | OPERATION: Hot melt & Cross talk adjustment

SIZE: All sizes | EQUIPMENT: Cross talk device

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Connect DY to the cross talk device, adjust V-coil to minimize cross talk output, and fix V-coil locations with hot melt adhesive.	X						9.91	9.91						
			0.00	**0.00**				**9.91**	**9.91**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke OPERATION Bonding

SIZE: 14" for ITC EQUIPMENT -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Tape V-coil (3 points), ferrite sheet(1 point), and Yh plate.	X						-	9.89						
20	Bond the tapes (3 points)	X						-	3.31						
			0.00	**0.00**				**0.00**	**13.20**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke | OPERATION: Bonding

SIZE: 14" for Customer | EQUIPMENT: -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Tape V-coil (3 points), ferrite sheet(1 point), and Yh plate.	X						-	9.89						
20	Bond the tapes (3 points) and magnet 017 (1 point)	X						-	4.31						
			0.00	**0.00**				**0.00**	**14.20**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke OPERATION Bonding

SIZE: 20" for ITC EQUIPMENT -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Tape V-coil (3 points), ferrite sheet (2 points), and Yh plate.	X						-	11.89						
20	Bond the tapes (3 points) and magnet 045 (4 points)	X						-	7.31						
			0.00	**0.00**				**0.00**	**19.20**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke OPERATION Bonding

SIZE: 20" for Customer EQUIPMENT -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Tape V-coil (3 points), ferrite sheet (2 points), and Yh plate.	X						-	11.89						
20	Bond the tapes (3 points), magnet 045 (4 points), and magnet 017 (1 point)	X						-	8.31						
			0.00	**0.00**				**0.00**	**20.20**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke | OPERATION: Bonding

SIZE: 21" for ITC | EQUIPMENT: -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Tape V-coil (3 points), ferrite sheet (3 points), and Yh plate.	X						-	13.89						
20	Bond the tapes (3 points) and magnet 046, 047 (8 points)	X						-	11.31						
			0.00	**0.00**				**0.00**	**25.20**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke | OPERATION: Bonding

SIZE: 21" for Customer | EQUIPMENT: -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Tape V-coil (3 points), ferrite sheet (3 points), and Yh plate.	X						-	13.89						
20	Bond the tapes (3 points), magnet 046, 047 (8 points), and magnet 017 (2 points)	X						-	13.31						
			0.00	**0.00**				**0.00**	**27.20**	**0.00**	**0.00**				

SEQUENCE OF EVENTS

PRODUCT: Deflection yoke OPERATION Packing

SIZE: All sizes EQUIPMENT -

SEQ No.	TASK	SETUP						REQUIRED		MOVE					
		VA	M/C	LABOUR	D/S	QTY	INT/ EXT	M/C	LABOUR	M/C	LABOUR	D/S	QTY	INT/ EXT	DIST
10	Move DY from bonding oven to the table									-	49.60	D	18	INT	1m.
20	Visually inspect DY							-	5.72						
30	Pack DY into the container							-	3.03						
40	Weigh and label the sealed container, and put in on the pallet.									-	9.40	D	18	INT	2m.
			0.00	**0.00**				**0.00**	**8.75**	**0.00**	**59.00**				

APPENDIX D

Summary for Defection Yoke capacity study

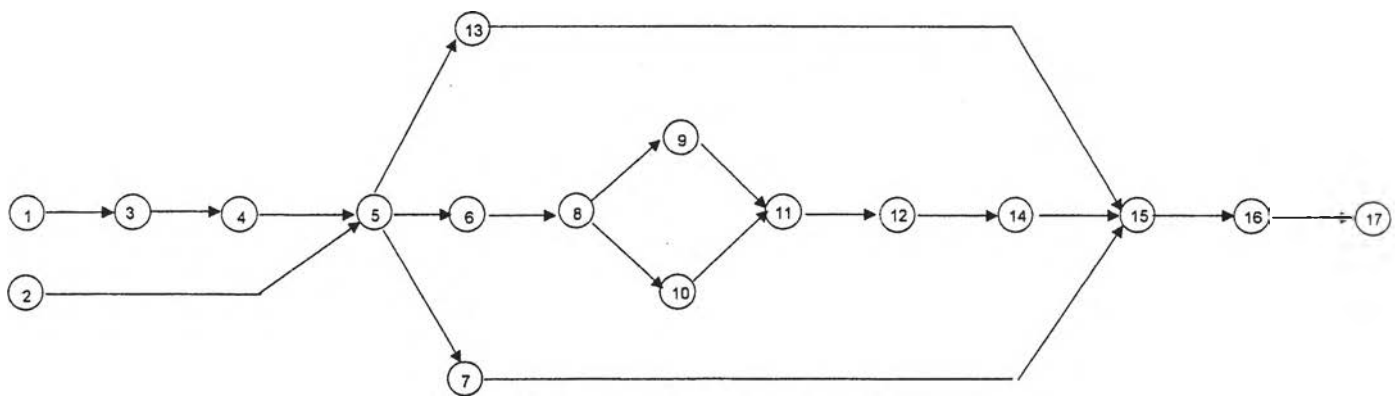
Size	Terminal type	Inspection for	Total task time (secs)		Assy Bottleneck	Daily throughput	Assy Line Eff (%)	Demand Y2002	% Demand proportion
			Subassembly	Assembly					
14"	Terminal Lead	CUS	27.32	272.40	Magnetic plate assembling	8,149	87.23%	28,957	1.1%
	Terminal Brd	**CUS**	**27.32**	**258.27**	**Inspection**	**8,165**	**82.87%**	**101,069**	**4.0%**
	Terminal Lead	ITC	27.32	227.30	Magnetic plate assembling	8,149	77.33%	51,133	2.0%
	Terminal Brd	**ITC**	**27.32**	**213.17**	**Withstand voltage checking**	**8,947**	**79.63%**	**789,002**	**31.3%**
20"	**Terminal Lead**	**CUS**	**39.70**	**266.57**	**Inspection**	**8,165**	**85.53%**	**667,303**	**26.5%**
	Terminal Brd	CUS	39.70	256.46	Inspection	8,165	82.29%	9,100	0.4%
	Terminal Lead	**ITC**	**39.70**	**221.47**	**Withstand voltage checking**	**9,282**	**85.83%**	**440,840**	**17.5%**
	Terminal Brd	ITC	39.70	214.33	Withstand voltage checking	8,553	76.54%	54,145	2.1%
21"	**Terminal Lead**	**CUS**	**39.70**	**286.04**	**Inspection**	**8,165**	**91.78%**	**236,527**	**9.4%**
	Terminal Brd	CUS	39.70	271.91	Inspection	8,165	87.24%	-	0.0%
	Terminal Lead	**ITC**	**39.70**	**239.84**	**Magnetic plate assembling**	**8,222**	**82.34%**	**143,488**	**5.7%**
	Terminal Brd	ITC	39.70	221.23	Withstand voltage checking	9,127	84.30%	-	0.0%
Total						**8,438**	**83.58%**	**2,521,564**	**100%**

Defection Yoke Capacity Study (Type 1: DY 14"/ Terminal board with leads/ Inspection for customer)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	7,699
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0			-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0			-
	Total	**Cell Eff:**	**100.00%**	**27.32**	**132**	**99%**	**100%**	**130.5**	**7.0**	**12**	**12**	**10,958**
Assembly												
5	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
6	Magnetic plate assembling	18.37	1	18.37	196	99%	100%	194	7.0	6	6	8,149
7	Plate VCR	12.10	1	12.10	298	99%	100%	295	7.0			
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	16.29	1	16.29	221	99%	100%	219	7.0	6	6	9,188
13	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0			
14	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
15	Inspection	110.00	1	110.00	33	99%	100%	32	7.0	36	36	8,165
16	Bonding	15.62	1	15.62	230	99%	100%	228	7.0	12	12	19,166
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Magnetic plate assemblin**		**18.37**				**194**				**8,149**
	Total	**Line Eff:**	**87.23%**	**272.40**						**102**	**102**	

Note: Heat shrinking tube and plate VCR attaching is currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 14"/ Terminal board with leads/ Inspection for customer

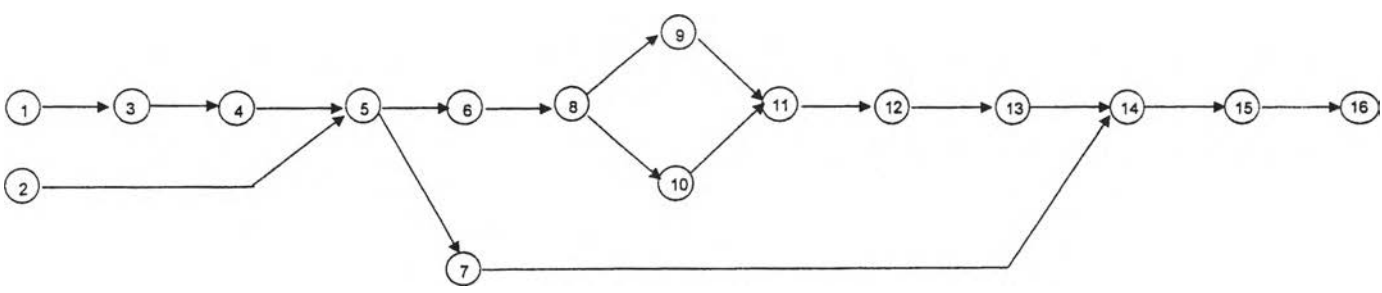


Defection Yoke Capacity Study (Type 2: DY 14"/ Terminal board / Inspection for customer)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	7,699
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0			-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0			-
	Total	**Cell Eff:**	**100.00%**	**27.32**	**132**	**99%**	**100%**	**130.5**	**7.0**	**12**	**12**	**10.958**
Assembly												
5	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
6	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
7	Plate VCR	12.10	1	12.10	298	99%	100%	295	7.0			
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	16.73	1	16.73	215	99%	100%	213	7.0	6	6	8,947
13	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
14	Inspection	110.00	1	110.00	33	99%	100%	32	7.0	36	36	8,165
15	Bonding	15.62	1	15.62	230	99%	100%	228	7.0	12	12	19,166
16	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Inspection**		**110.00**				**32**				8,165
	Total	**Line Eff:**	**82.87%**	**258.27**						**102**	**102**	

Note: Plate VCR attaching is currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 14"/ Terminal board / Inspection for customer

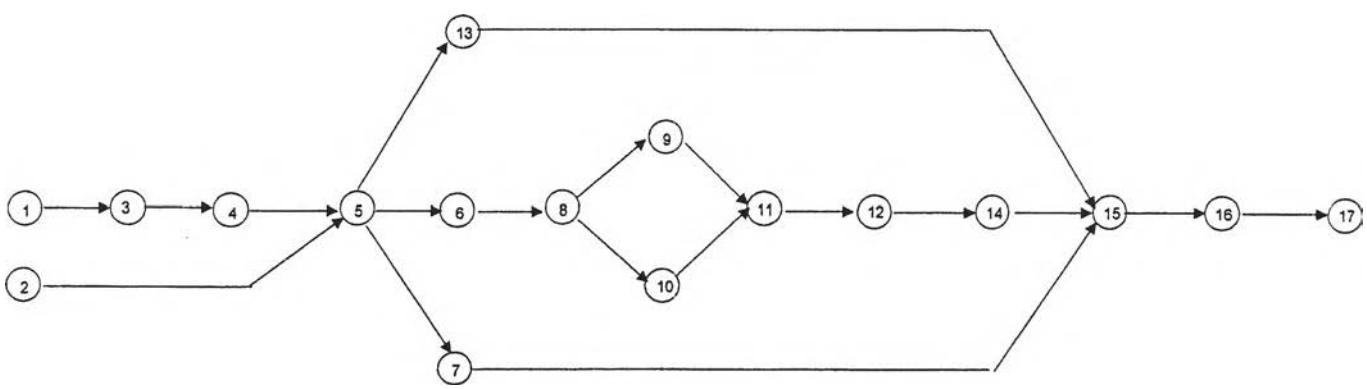


Defection Yoke Capacity Study (Type 3: DY 14"/ Terminal board with leads/ Inspection for ITC)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	89.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	**7,699**
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0			-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0			-
	Total	**Cell Eff:**	**100.00%**	**27.32**	**132**	**99%**	**100%**	**130.5**	**7.0**	**12**	**12**	**10,958**
Assembly												
5	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
6	Magnetic plate assembling	18.37	1	18.37	196	99%	100%	194	7.0	6	6	8,149
7	Plate VCR	12.10	1	12.10	298	99%	100%	295	7.0			
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	16.29	1	16.29	221	99%	100%	219	7.0	6	6	9,188
13	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0			
14	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
15	Inspection	66.00	1	66.00	55	99%	100%	54	7.0	30	30	11,340
16	Bonding	14.52	1	14.52	248	99%	100%	245	7.0	12	12	20,618
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Magnetic plate assembling**		**18.37**				**194**				**8,149**
	Total	**Line Eff:**	**77.33%**	**227.30**						**96**	**96**	

Note: Heat shrinking tube and plate VCR attaching is currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 14"/ Terminal board with leads/ Inspection for ITC

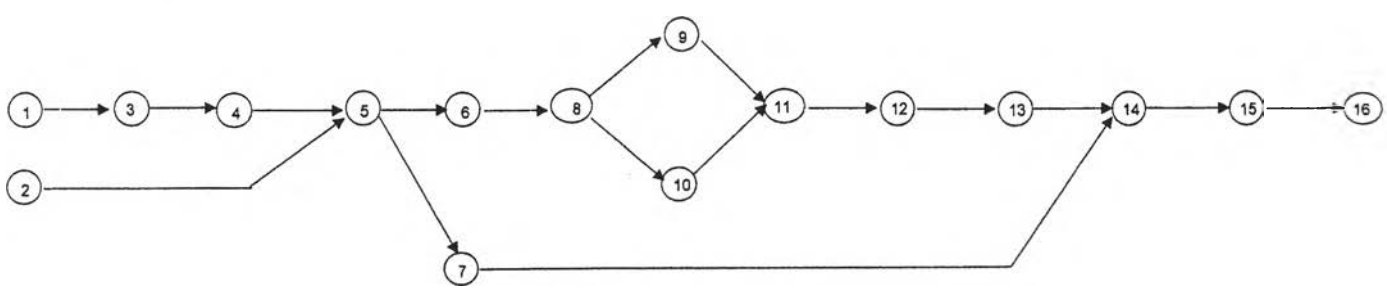


Defection Yoke Capacity Study (Type 4: DY 14"/ Terminal board / Inspection for ITC)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	**7,699**
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0			-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0			-
	Total	**Cell Eff:**	100.00%	**27.32**	**132**	**99%**	**100%**	**130.5**	**7.0**	**12**	**12**	**10,958**
Assembly												
5	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
6	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
7	Plate VCR	12.10	1	12.10	298	99%	100%	295	7.0			
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	16.73	1	16.73	215	99%	100%	213	7.0	6	6	8,947
13	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
14	Inspection	66.00	1	66.00	55	99%	100%	54	7.0	30	30	11,340
15	Bonding	14.52	1	14.52	248	99%	100%	245	7.0	12	12	20,618
16	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Withstand voltage checking**		**16.73**				**213**				**8,947**
	Total	**Line Eff:**	**79.63%**	**213.17**						**96**	**96**	

Note: Plate VCR attaching is currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 14"/ Terminal board / Inspection for ITC

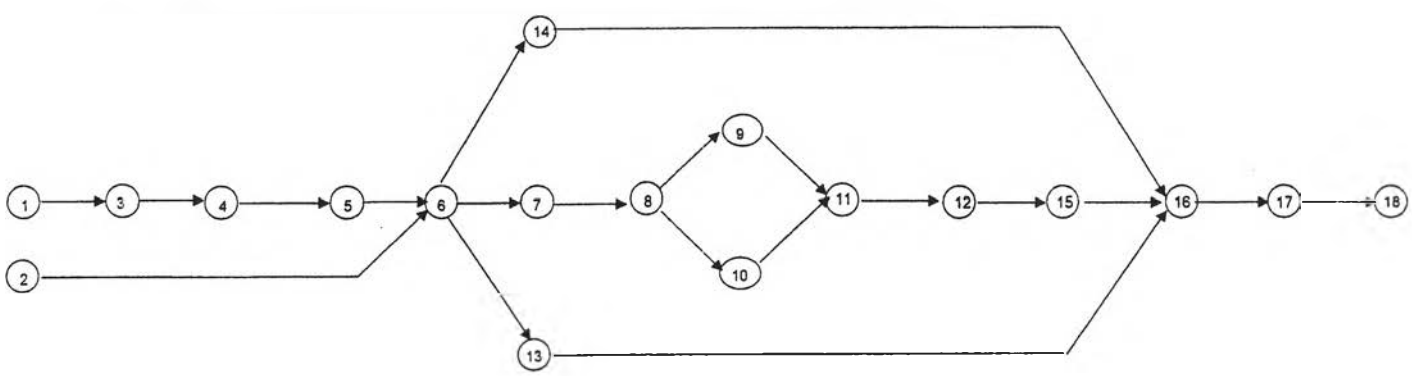


Defection Yoke Capacity Study (Type 5: DY 20"/ Terminal board with leads/ Inspection for customer)

tem	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	**7,699**
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0	0	0	-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0	0	0	-
5	Check Air-L	6.19	0.5	12.38	291	99%	100%	288	7	0	0	-
	Total	**Cell Eff:**	**100.00%**	39.70	91	99%	100%	89.8	7.0	12	12	7,540
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	16.13	1	16.13	223	99%	100%	221	7.0	6	6	9,282
13	Magnet attaching	5.89	1	5.89	612	99%	100%	606	7.0	0	0	
14	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0	0	0	
15	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
16	Inspection	110.00	1	110.00	33	99%	100%	32	7.0	36	36	8,165
17	Bonding	22.22	1	22.22	162	99%	100%	160	7.0	12	12	13,473
18	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Inspection**		**110.00**				**32**				**8,165**
	Total	**Line Eff:**	**85.53%**	**266.57**						**102**	**102**	

Note: Heat shrinking tube attaching and magnet attaching are currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 20"/ Terminal board with leads/ Inspection for customer

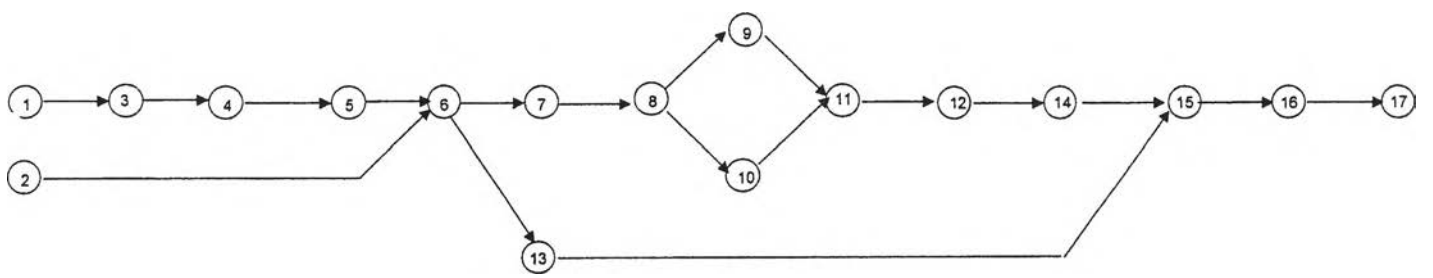


Defection Yoke Capacity Study (Type 6: DY 20"/ Terminal board / Inspection for customer)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	**7,699**
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0	0	0	-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0	0	0	-
5	Check Air-L	6.19	0.5	12.38	291	99%	100%	288	7	0	0	-
	Total	**Cell Eff:**	**100.00%**	**39.70**	**91**	**99%**	**100%**	**89.8**	**7.0**	**12**	**12**	**7,540**
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Magnet attaching	5.89	1	5.89	612	99%	100%	606	7.0	0	0	
14	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
	Inspection	110.00	1	110.00	33	99%	100%	32	7.0	36	36	8,165
16	Bonding	22.22	1	22.22	162	99%	100%	160	7.0	12	12	13,473
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Inspection**		**110.00**				**32**				**8,165**
	Total	**Line Eff:**	**82.29%**	**256.46**						**102**	**102**	

Note: Magnet attaching are currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 20"/ Terminal board / Inspection for customer

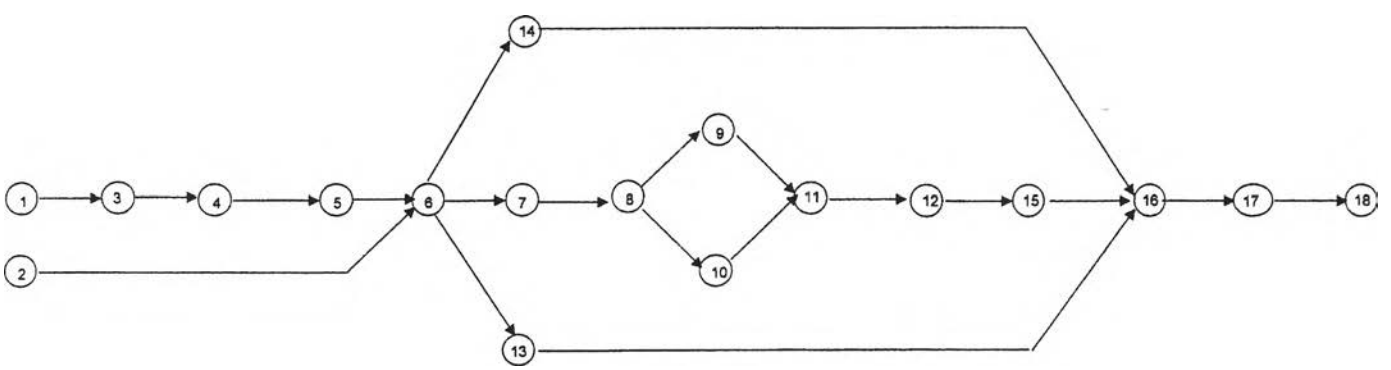


Defection Yoke Capacity Study (Type 7: DY 20"/ Terminal board with leads/ Inspection for ITC)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		138.6				25			24	7,699
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0	0	0	-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0	0	0	-
5	Check Air-L	6.19	0.5	12.38	291	99%	100%	288	7	0	0	-
	Total	**Cell Eff:**	100.00%	39.70	91	99%	100%	89.8	7.0	12	12	7,540
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	16.13	1	16.13	223	99%	100%	221	7.0	6	6	9,282
13	Magnet attaching	5.89	1	5.89	612	99%	100%	606	7.0			
14	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0			
15	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
16	Inspection	66.00	1	66.00	55	99%	100%	54	7.0	30	30	11,340
17	Bonding	21.12	1	21.12	170	99%	100%	169	7.0	12	12	14,175
18	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Withstand voltage checkin**		16.13				221				9,282
	Total	**Line Eff:**	85.83%	221.47						96	96	

Note: Heat shrinking tube attaching and magnet attaching are currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 20"/ Terminal board with leads/ Inspection for ITC

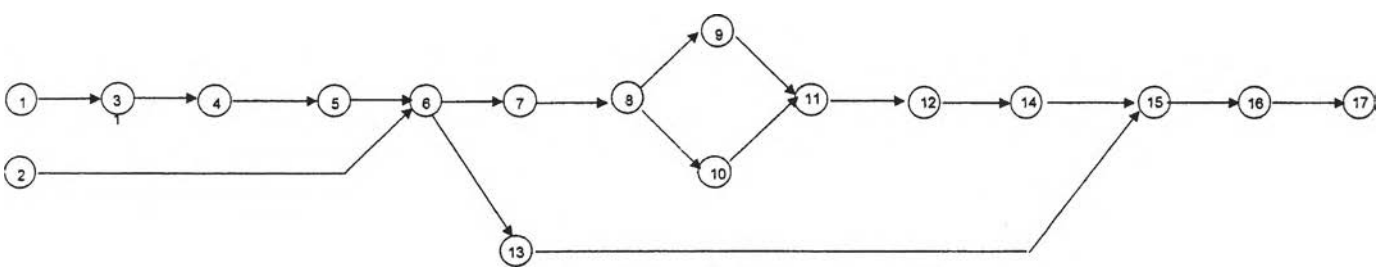


Defection Yoke Capacity Study (Type 8: DY 20"/ Terminal board / Inspection for ITC)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		138.6				25			24	7,699
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0	0	0	-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0	0	0	-
5	Check Air-L	6.191533333	0.5	12.38	291	99%	100%	288	7	0	0	-
	Total	**Cell Eff:**	**100.00%**	**39.70**	**91**	**99%**	**100%**	**89.8**	**7.0**	**12**	**12**	**7,540**
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	17.50	1	17.50	206	99%	100%	204	7.0	6	6	8,553
13	Magnet attaching	5.89	1	5.89	612	99%	100%	606	7.0			
14	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
15	Inspection	66.00	1	66.00	55	99%	100%	54	7.0	30	30	11,340
16	Bonding	21.12	1	21.12	170	99%	100%	169	7.0	12	12	14,175
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Withstand voltage checkin**		17.50				204				8,553
	Total	**Line Eff:**	**76.54%**	214.33						96	96	

Note: Magnet attaching are currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 20"/ Terminal board / Inspection for ITC

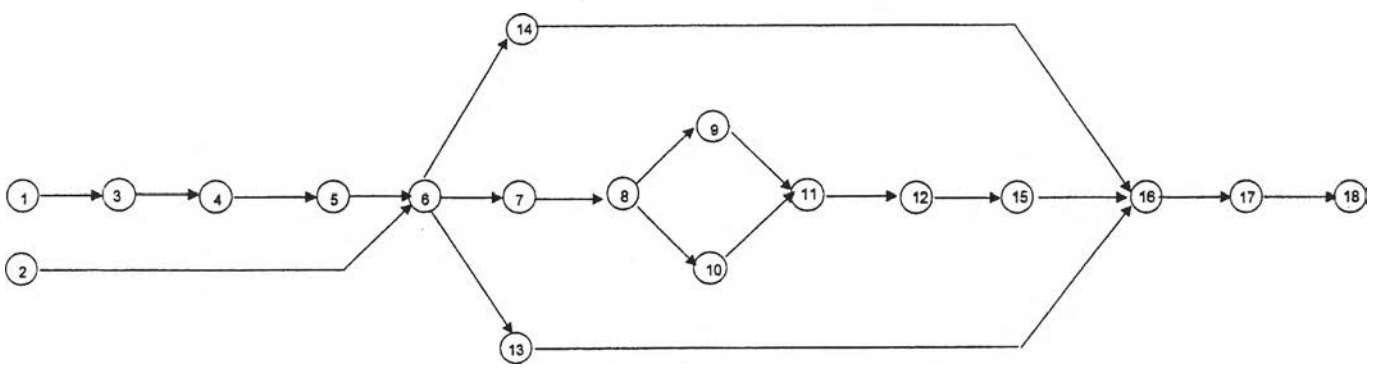


Defection Yoke Capacity Study (Type 9: DY 21"/ Terminal board with leads/ Inspection for customer)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		138.6				25			24	7,699
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0	0	0	-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0	0	0	-
5	Check Air-L	6.191533333	0.5	12.38	291	99%	100%	288	7	0	0	-
	Total	**Cell Eff:**	**100.00%**	39.70	91	99%	100%	89.8	7.0	12	12	7,540
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	18.21	1	18.21	198	99%	100%	196	7.0	6	6	8,222
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	16.13	1	16.13	223	99%	100%	221	7.0	6	6	9,282
13	Magnet attaching	11.77	1	11.77	306	99%	95%	288	7.0			
14	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0			
15	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
16	Inspection	110.00	1	110.00	33	99%	100%	32	7.0	36	36	8,165
17	Bonding	29.92	1	29.92	120	99%	100%	119	7.0	12	12	10,006
18	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Inspection**		110.00				32				8,165
	Total	**Line Eff:**	**91.78%**	286.04						102	102	

Note: Heat shrinking tube and magnet attaching is currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 21"/ Terminal board with leads/ Inspection for customer

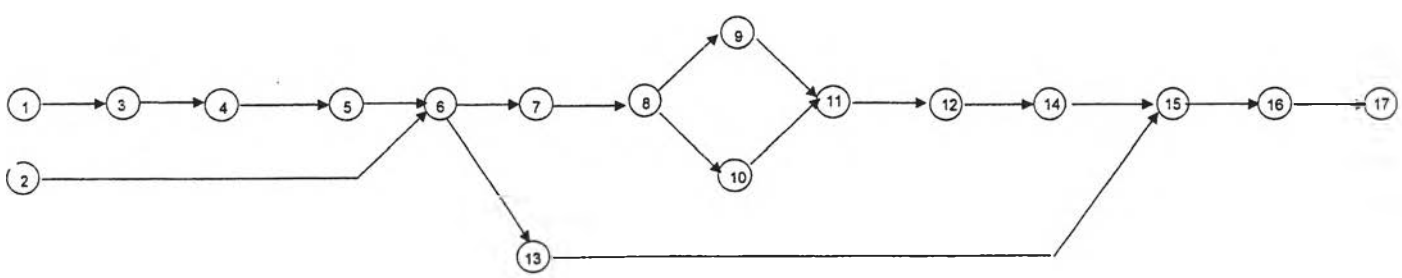


Defection Yoke Capacity Study (Type 10: DY 21"/ Terminal board / Inspection for customer)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		138.6				25			24	7,699
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0	0	0	-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0	0	0	-
5	Check Air-L	6.19153333	0.5	12.38	291	99%	100%	288	7	0	0	-
	Total	**Cell Eff:**	**100.00%**	39.70	91	99%	100%	89.8	7.0	12	12	7,540
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	16.40	1	16.40	219	99%	100%	217	7.0	6	6	9,127
13	Magnet attaching	11.77	1	11.77	306	99%	95%	288	7.0			
14	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
	Inspection	110.00	1	110.00	33	99%	100%	32	7.0	36	36	8,165
16	Bonding	29.92	1	29.92	120	99%	100%	119	7.0	12	12	10,006
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Inspection**		110.00				32				8,165
	Total	**Line Eff:**	**87.24%**	271.91						102	102	

Note: Magnet attaching are currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 21"/ Terminal board / Inspection for customer

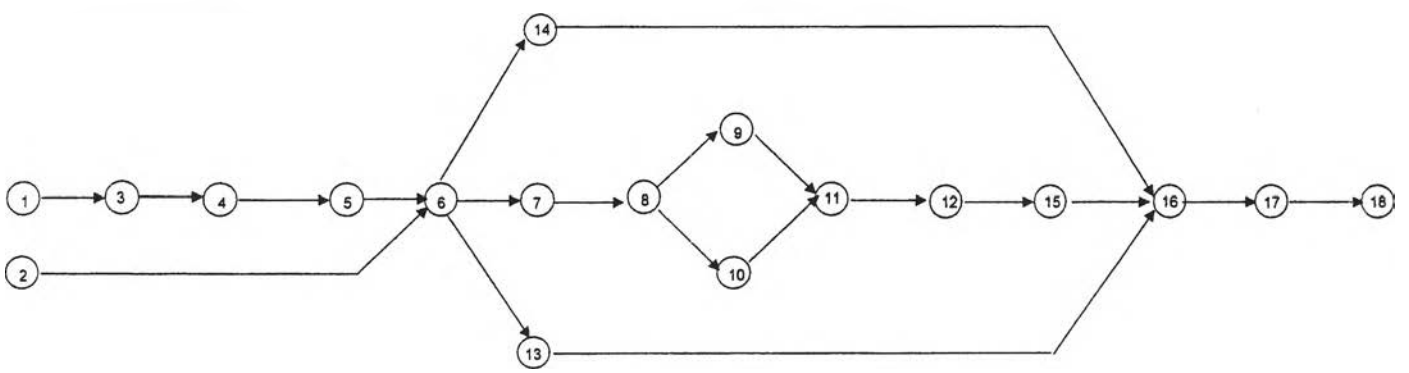


Defection Yoke Capacity Study (Type 11: DY 21"/ Terminal board with leads/ Inspection for ITC)

tem	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		138.6				25			24	7,699
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0	0	0	-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0	0	0	-
5	Check Air-L	6.19153333	0.5	12.38	291	99%	100%	288	7	0	0	-
	Total	**Cell Eff:**	**100.00%**	39.70	91	99%	100%	89.8	7.0	12	12	7,540
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	18.21	1	18.21	198	99%	100%	196	7.0	6	6	8,222
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	16.13	1	16.13	223	99%	100%	221	7.0	6	6	9,282
13	Magnet attaching	11.77	1	11.77	306	99%	95%	288	7.0			
14	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0	0	0	
5	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
16	Inspection	66.00	1	66.00	55	99%	100%	54	7.0	30	30	11,340
17	Bonding	27.72	1	27.72	130	99%	100%	129	7.0	12	12	10,800
18	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Magnetic plate assembling**		18.21				196				8,222
	Total	**Line Eff:**	**82.34%**	239.84						96	96	

Note: Heat shrinking tube and magnet attaching is currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 21"/ Terminal board with leads/ Inspection for ITC

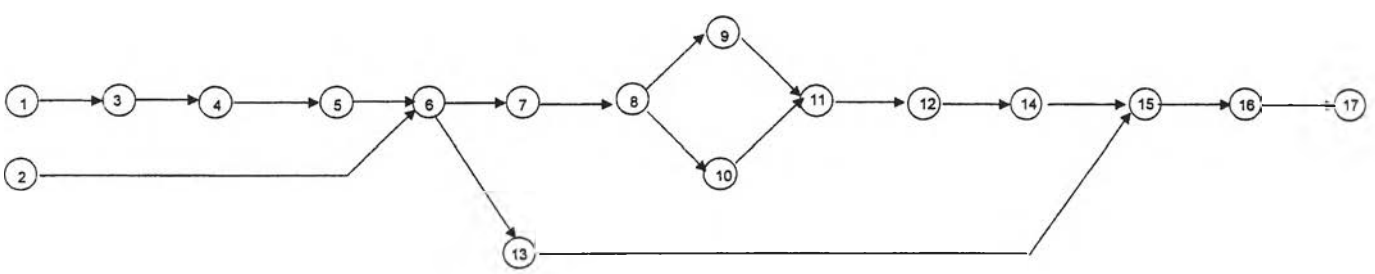


Defection Yoke Capacity Study (Type 12: DY 21"/ Terminal board / Inspection for ITC)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	7,699
Subassembly												
3	H-coil taping	7.30	0.5	14.59	247	99%	100%	244	7.0	0	0	-
4	H-coil peeling off	6.36	0.5	12.73	283	99%	100%	280	7.0	0	0	-
5	Check Air-L	6.191533333	0.5	12.38	291	99%	100%	288	7	0	0	-
	Total	**Cell Eff:**	**100.00%**	39.70	91	99%	100%	89.8	7.0	12	12	7,540
Assembly												
6	Seperator assembling	11.56	1	11.56	311	99%	100%	308	7.0	6	6	12,948
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal board)	9.78	1	9.78	368	99%	100%	364	7.0	6	6	15,303
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	16.40	1	16.40	219	99%	100%	217	7.0	6	6	9,127
13	Magnet attaching	11.77	1	11.77	306	99%	95%	288	7.0	0	0	
14	Cross taik adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
15	Inspection	66.00	1	66.00	55	99%	100%	54	7.0	30	30	11,340
16	Bonding	27.72	1	27.72	130	99%	100%	129	7.0	12	12	10,800
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Withstand voltage checkin**		**16.40**				**217**				9,127
	Total	**Line Eff:**	**84.30%**	**221.23**						**96**	**96**	

Note: Magnet attaching are currently operated with withstand voltage device in withstand voltage checking station

Precedence diagram for DY 21" /Terminal board



APPENDIX E

Station	Elements	Cycle time (sec.)	No. of coils/ Cycle time	Throughput time (sec)	Task type
Taping H-coil	Move H-coil from tray to the table	25.43	60	0.42	Move
	Tape H-coil	6.15	1	6.15	VA
	Move H-coil to the tray	8.69	12	0.72	Non VA
Peeling off	Move H-coil to the table and trim the tips	6.82	12	0.57	Setup
	Peeling off	23.65	12	1.97	VA
	Arrange coils 14" to the tray	77.09	60	1.28	Move
	Move coils 20'&21" to check Air-L	8.69	12	0.72	Non VA
Check Air-L	Move from tray to the table	15.52	60	0.26	Non VA
	Check Air-L	5.06	1	5.06	VA
	Arrange to the tray	55.01	60	0.92	Move

Standard time of DY 14" Sub assembly process

Task type		STD time (secs)		%proportion
Total	Setup	1.14	17.38	78%
Total	VA	16.24		
Total	Move	3.42	3.42	15%
Total	Non VA	1.45	1.45	7%
Total STD time (secs) include Non VA time			22.24	100%
Total STD time (secs) exclude Non VA time			20.79	

Standard time of DY 20",21" Sub assembly process

Task type		STD time (secs)		%proportion
Total	Setup	1.14	27.50	82%
Total	VA	26.36		
Total	Move	2.68	2.68	8%
Total	Non VA	3.41	3.41	10%
Total STD time (secs) include Non VA time			33.59	100%
Total STD time (secs) exclude Non VA time			30.18	

DY sizes	Demand forecast	Manhours required	
		Include Non VA time	Exclude Non VA time
DY 14"	4,200	25.95	24.26
DY 20", 21"	5,800	54.12	48.62
Total manhour requirement	10,000	80.07	72.88
Manpower requirement *(based on assumption below)*		13	11

APPENDIX F

Appendix F: Deflection yoke demand in y2002

Product type	Demand Year 2002												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Type 1	13,104	10,210	11,138	12,995	13,250	13,759	12,995	11,976	10,565	10,483	10,611	10,611	141,696
Type 2	29,120	14,264	15,779	5,096	3,822	4,459	5,733	5,096	4,891	4,368	4,582	3,858	101,069
Type 3	-	3,003	47,802	4,586	14,778	5,096	5,096	5,096	4,696	6,115	4,823	3,858	104,950
Type 4	63,336	50,601	69,151	41,023	44,590	48,030	36,819	42,806	88,238	89,544	118,405	96,460	789,002
Total DY 14"	105,560	78,078	143,871	63,700	76,440	71,344	60,642	64,974	108,390	110,510	138,420	114,787	1,136,717
Type 5	41,860	29,084	54,318	54,782	91,728	78,988	87,906	85,358	53,053	33,215	37,674	23,342	671,307
Type 6	-	1,283	855	637	1,274	637	637	637	1,001	910	410	819	9,100
Type 7	18,200	35,071	47,047	38,857	41,405	40,768	38,220	42,679	41,041	33,670	31,532	32,351	440,840
Type 8	32,760	21,385	-	-	-	-	-	-	-	-	-	-	54,145
Total DY 20"	92,820	86,823	102,220	94,276	134,407	120,393	126,763	128,674	95,095	67,795	69,615	56,511	1,175,392
Type 9	6,552	7,371	20,311	23,260	22,932	22,932	23,751	22,604	21,458	22,113	22,604	20,639	236,527
Type 10	-	-	-	-	-	-	-	-	-	-	-	-	-
Type 11	1,966	9,009	-	20,147	14,742	15,561	14,742	14,742	15,233	14,742	12,776	9,828	143,489
Type 12	-	-	-	-	-	-	-	-	-	-	-	-	-
Total DY 21"	8,518	16,380	20,311	43,407	37,674	38,493	38,493	37,346	36,691	36,855	35,381	30,467	380,016
Total DY	206,898	181,281	266,403	201,383	248,521	230,230	225,898	230,994	240,176	215,160	243,416	201,765	2,692,126

Working days	29	26	31	25	30	28	29	29	30	27	30	25	339
Output/ day													
DY 14"	4,000	3,300	5,100	2,800	2,800	2,800	2,800	2,800	4,300	4,800	5,300	5,300	
DY 20"	3,700	4,000	4,000	4,800	5,500	5,300	5,400	5,400	4,000	3,300	3,000	3,000	
DY 21"	350	750	700	2,200	1,500	1,700	1,600	1,600	1,500	1,700	1,500	1,500	
TOTAL DY	8,050	8,050	9,800	9,800	9,800	9,800	9,800	9,800	9,800	9,800	9,800	9,800	

APPENDIX G

Summary for Defection Yoke capacity study

Size	Terminal type	Inspection for	Total task time (secs)		Assy Bottleneck	Daily throughput	Manpower		Assy Line Eff (%)	Demand Y2002	% Demand proportion
			Subassembly	Assembly			Subassembly	Assembly			
14"	Terminal Lead	CUS	20.79	266.81	V-coil assembling	10,155	12	108	95.58%	28,957	1.1%
	Terminal Brd	**CUS**	**20.79**	**258.29**	**H-coil terminal winding**	**10,247**	**12**	**108**	**93.20%**	**101,069**	**4.0%**
	Terminal Lead	ITC	20.79	221.71	V-coil assembling (terminal lead)	10,155	12	90	94.29%	51,133	2.0%
	Terminal Brd	**ITC**	**20.79**	**213.19**	**H-coil terminal winding**	**10,247**	**12**	**90**	**91.26%**	**789,002**	**31.3%**
20"	**Terminal Lead**	CUS	**30.18**	**253.97**	**V-coil assembling (terminal lead)**	**10,155**	**12**	**108**	**95.72%**	**667,303**	**26.5%**
	Terminal Brd	CUS	30.18	245.46	H-coil terminal winding	10,247	12	108	93.35%	9,100	0.4%
	Terminal Lead	**ITC**	**30.18**	**208.87**	**V-coil assembling (terminal lead)**	**10,155**	**12**	**90**	**94.47%**	**440,840**	**17.5%**
	Terminal Brd	ITC	30.18	200.36	H-coil terminal winding	10,247	12	90	91.44%	54,145	2.1%
21"	**Terminal Lead**	CUS	**30.18**	**267.56**	**Bonding**	**10,006**	**12**	**114**	**94.13%**	**236,527**	**9.4%**
	Terminal Brd	CUS	30.18	259.04	Bonding	10,006	12	114	91.13%	-	0.0%
	Terminal Lead	**ITC**	**30.18**	**221.36**	**V-coil assembling (terminal lead)**	**10,155**	**12**	**96**	**93.86%**	**143,488**	**5.7%**
	Terminal Brd	ITC	30.18	212.84	H-coil terminal winding	10,247	12	96	91.06%	-	0.0%
Total						**10,176**	**12**	**102**	**93.62%**	**2,521,564**	**100%**

Manpower Allocation in assembly line

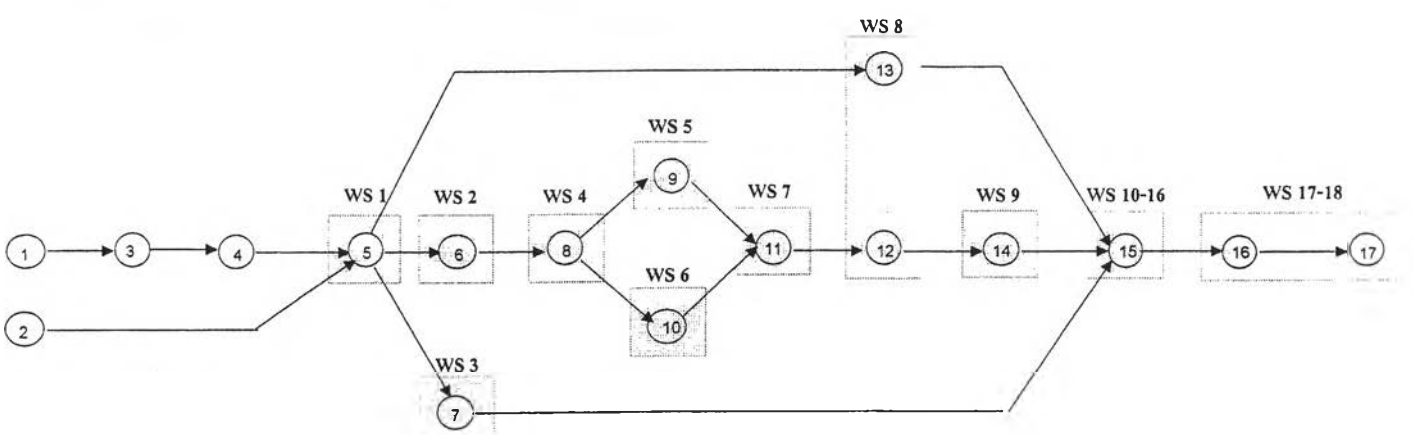
Size	Terminal type	Inspection for	Total manpower required	Total manpower required /Line	Manpower/ line		
					Before Inspection	Inspection	After Inspection
14"	Terminal Lead	CUS	108	18	9	7	2
	Terminal Brd	**CUS**	108	18	**9**	**7**	**2**
	Terminal Lead	ITC	90	15	9	4	2
	Terminal Brd	**ITC**	90	15	**9**	**4**	**2**
20"	**Terminal Lead**	CUS	108	18	**8**	**7**	**3**
	Terminal Brd	CUS	108	18	8	7	3
	Terminal Lead	**ITC**	90	15	**8**	**4**	**3**
	Terminal Brd	ITC	90	15	8	4	3
21"	**Terminal Lead**	**CUS**	114	19	**9**	**7**	**3**
	Terminal Brd	CUS	114	19	9	7	3
	Terminal Lead	**ITC**	96	16	**9**	**4**	**3**
	Terminal Brd	ITC	96	16	9	4	3

Defection Yoke Capacity Study (Type 1: DY 14"/ Terminal board with leads/ Inspection for customer)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		138.6				**25**			24	7,699
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0			-
4	H-coil peeling off	3.82	0.5	7.65	471	99%	100%	466	7.0			-
	Total	**Cell Eff:**	100.00%	20.79	173	99%	100%	171.4	7.0	12	12	14,397
Assembly												
5	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
6	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
7	Plate VCR	12.10	1	12.10	298	99%	100%	295	7.0	6	6	12,371
8	V-coil assembling	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0			
14	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
15	Inspection	99.00	1	99.00	36	99%	100%	36	7.0	42	42	10,584
16	Bonding	28.84	1	28.84	125	99%	100%	124	7.0	12	12	10,381
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0			
	Bottleneck	**V-coil assembling**		14.74				**242**				**10,155**
	Total	**Line Eff:**	**95.58%**	266.81						108	108	

Note: Heat shrinking tube attaching is currently operated with withstand voltage device in withstand voltage checking station

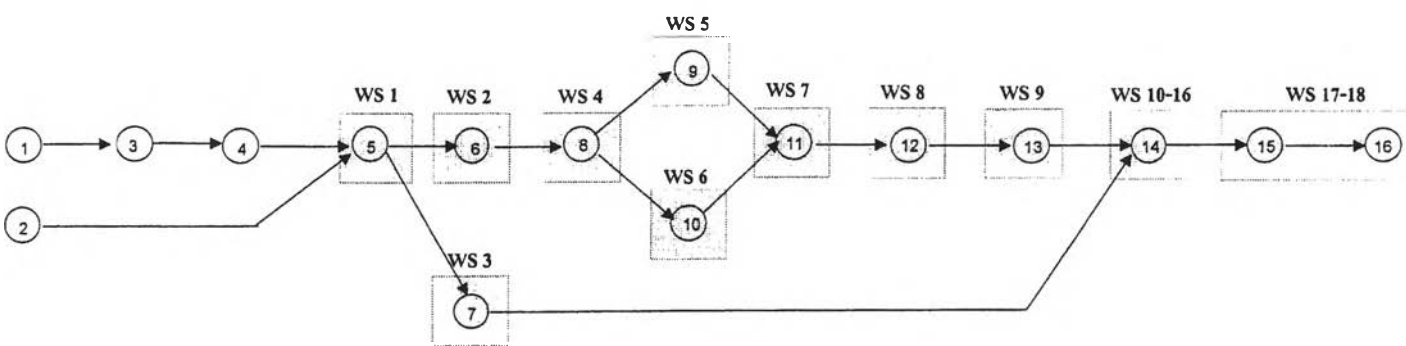
Precedence diagram for DY 14"/ Terminal board with leads/ Inspection for customer



Defection Yoke Capacity Study (Type 2: DY 14"/ Terminal board / Inspection for customer)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	7,699
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0			-
4	H-coil peeling off	3.82	0.5	7.65	471	99%	100%	466	7.0			-
	Total	**Cell Eff:**	**100.00%**	**20.79**	**173**	**99%**	**100%**	**171.4**	**7.0**	**12**	**12**	**14,397**
Assembly												
5	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
6	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
7	Plate VCR	12.10	1	12.10	298	99%	100%	295	7.0	6	6	12,371
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
14	Inspection	99.00	1	99.00	36	99%	100%	36	7.0	42	42	10,584
15	Bonding	28.84	1	28.84	125	99%	100%	124	7.0	12	12	10,381
16	Packing	13.22	1	13.22	272	99%	100%	270	7.0			
	Bottleneck	**H-coil terminal winding**		**14.61**				**244**				**10,247**
	Total	**Line Eff:**	**93.20%**	**258.29**						**108**	**108**	

Precedence diagram for DY 14"/ Terminal board / Inspection for customer

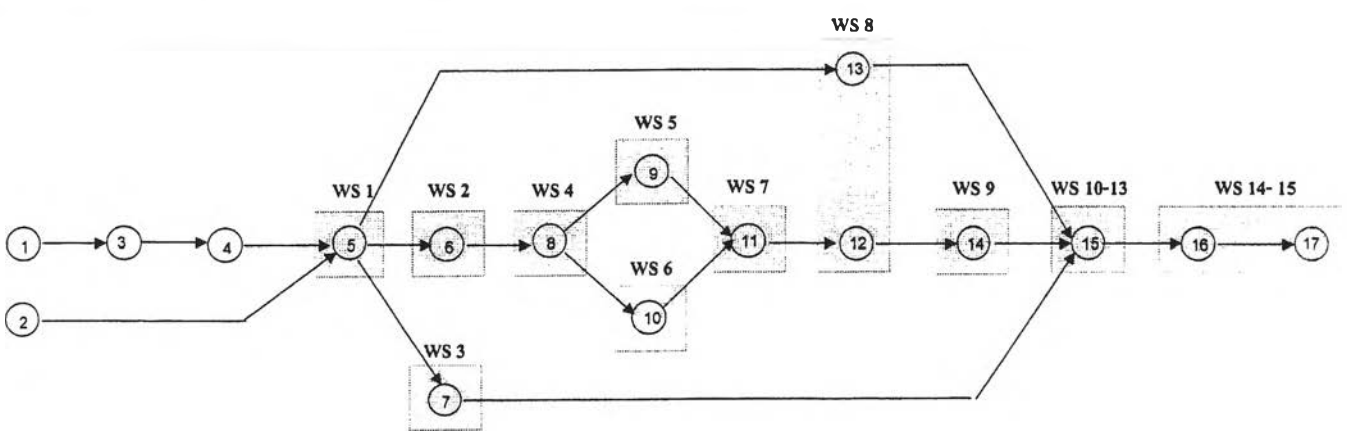


Defection Yoke Capacity Study (Type 3: DY 14"/ Terminal board with leads/ Inspection for ITC)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	**7,699**
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0			-
4	H-coil peeling off	3.82	0.5	7.65	471	99%	100%	466	7.0			-
	Total	**Cell Eff:**	**100.00%**	20.79	173	99%	100%	171.4	7.0	12	12	14,397
Assembly												
5	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
6	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
7	Plate VCR	12.10	1	12.10	298	99%	100%	295	7.0	6	6	12,371
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0			
14	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
15	Inspection	55.00	1	55.00	65	99%	100%	65	7.0	24	24	10,886
16	Bonding	27.74	1	27.74	130	99%	100%	128	7.0	12	12	10,792
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0			
	Bottleneck	**V-coil assembling (termina**		**14.74**				**242**				**10,155**
	Total	**Line Eff:**	**94.29%**	**221.71**						**90**	**90**	

Note: Heat shrinking tube attaching is currently operated with withstand voltage device in withstand voltage checking station

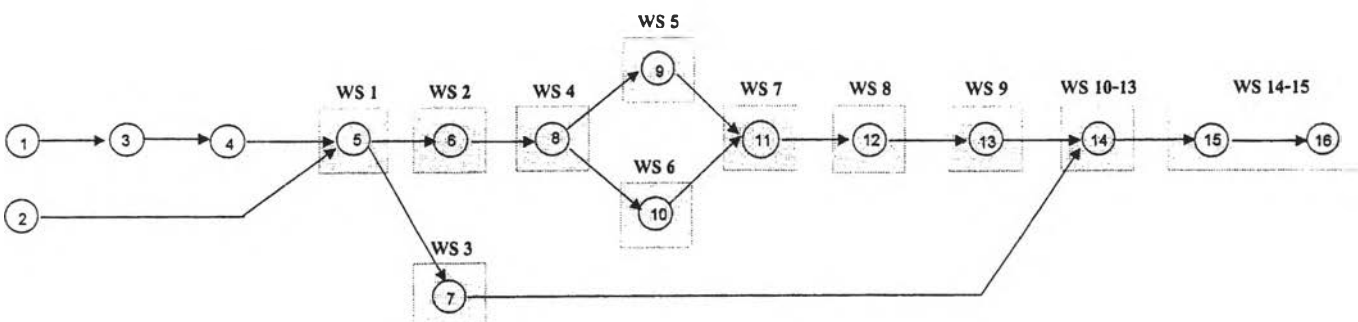
Precedence diagram for DY 14"/ Terminal board with leads/ Inspection for ITC



Defection Yoke Capacity Study (Type 4: DY 14"/ Terminal board / Inspection for ITC)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	**7,699**
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0			-
4	H-coil peeling off	3.82	0.5	7.65	471	99%	100%	466	7.0			-
	Total	**Cell Eff:**	**100.00%**	**20.79**	**173**	**99%**	**100%**	**171.4**	**7.0**	**12**	**12**	**14,397**
Assembly												
5	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
6	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
7	Plate VCR	12.10	1	12.10	298	99%	100%	295	7.0	6	6	12,371
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
14	Inspection	55.00	1	55.00	65	99%	100%	65	7.0	24	24	10,886
15	Bonding	27.74	1	27.74	130	99%	100%	128	7.0	12	12	10,792
16	Packing	13.22	1	13.22	272	99%	100%	270	7.0			
	Bottleneck	**H-coil terminal winding**		**14.61**				**244**				**10,247**
	Total	**Line Eff:**	**91.26%**	**213.19**						**90**	**90**	

Precedence diagram for DY 14"/ Terminal board / Inspection for ITC

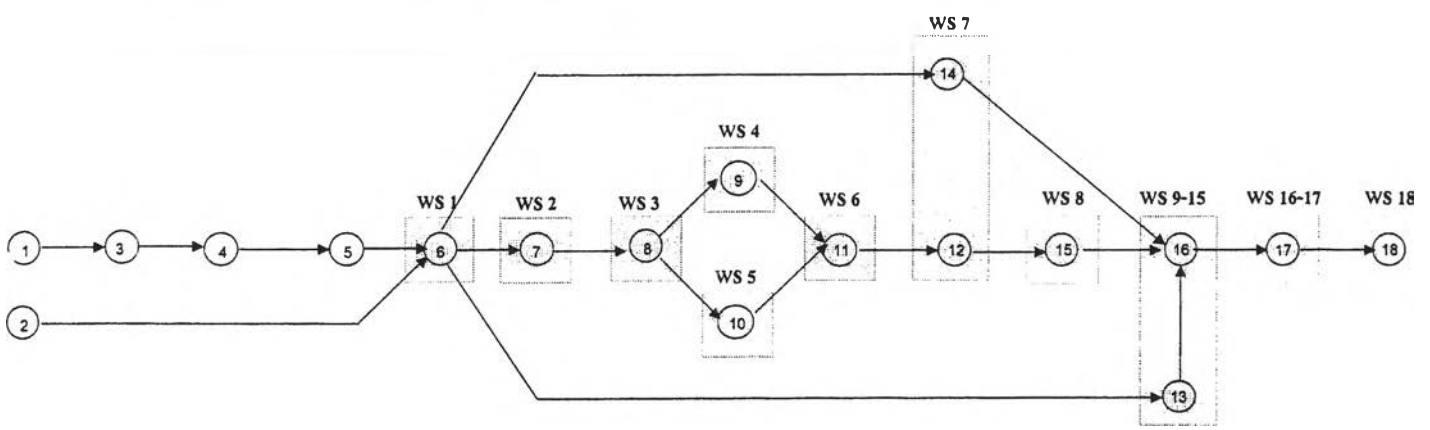


Defection Yoke Capacity Study (Type 5: DY 20"/ Terminal board with leads/ Inspection for customer)

tem	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	7,699
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0	0	0	-
4	H-coil peeling off	2.54	0.5	5.08	709	99%	100%	702	7.0	0	0	-
5	Check Air-L	5.98	0.5	11.95	301	99%	100%	298	7.0	0	0	-
	Total	**Cell Eff:**	**100.00%**	**30.18**	**119**	**99%**	**100%**	**118.1**	**7.0**	**12**	**12**	9,920
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Magnet attaching	5.89	1	5.89	612	99%	100%	606	7.0			
14	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0			
	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
16	Inspection	99.00	1	99.00	36	99%	100%	36	7.0	42	42	10,584
17	Bonding	22.22	1	22.22	162	99%	100%	160	7.0	12	12	13,473
18	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**V-coil assembling (termin**		**14.74**				**242**				**10,155**
	Total	**Line Eff:**	**95.72%**	**253.97**						**108**	**108**	

Note: Heat shrinking tube attaching is currently operated with withstand voltage device in withstand voltage checking station

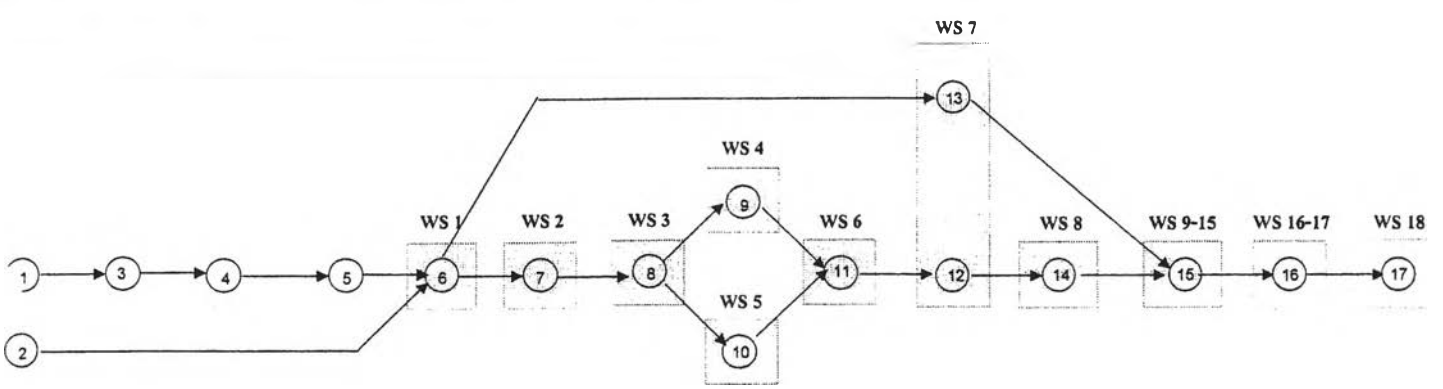
Precedence diagram for DY 20"/ Terminal board with leads/ Inspection for customer



Defection Yoke Capacity Study (Type 6: DY 20"/ Terminal board / Inspection for customer)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	**7,699**
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0	0	0	-
4	H-coil peeling off	2.54	0.5	5.08	709	99%	100%	702	7.0	0	0	-
5	Check Air-L	5.98	0.5	11.95	301	99%	100%	298	7.0	0	0	-
	Total	**Cell Eff:**	**100.00%**	**30.18**	**119**	**99%**	**100%**	**118.1**	7.0	**12**	**12**	9,920
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Magnet attaching	5.89	1	5.89	612	99%	100%	606	7.0			
	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
15	Inspection	99.00	1	99.00	36	99%	100%	36	7.0	42	42	10,584
16	Bonding	22.22	1	22.22	162	99%	100%	160	7.0	12	12	13,473
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**H-coil terminal winding**		14.61				**244**				**10,247**
	Total	**Line Eff:**	**93.35%**	**245.46**						**108**	**108**	

Precedence diagram for DY 20"/ Terminal board / Inspection for customer

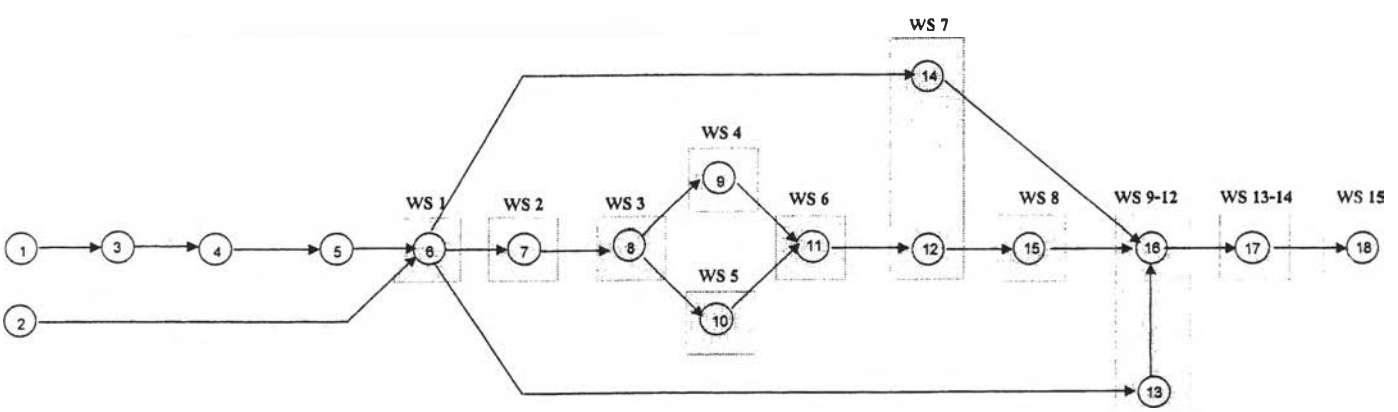


Defection Yoke Capacity Study (Type 7: DY 20"/ Terminal board with leads/ Inspection for ITC)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	**7,699**
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0	0	0	-
4	H-coil peeling off	2.54	0.5	5.08	709	99%	100%	702	7.0	0	0	-
5	Check Air-L	5.98	0.5	11.95	301	99%	100%	298	7.0	0	0	-
	Total	**Cell Eff:**	**100.00%**	**30.18**	**119**	**99%**	**100%**	**118.1**	**7.0**	**12**	**12**	**9,920**
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Magnet attaching	5.89	1	5.89	612	99%	100%	606	7.0			
14	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0			
5	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
16	Inspection	55.00	1	55.00	65	99%	100%	65	7.0	24	24	10,886
17	Bonding	21.12	1	21.12	170	99%	100%	169	7.0	12	12	14,175
18	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**V-coil assembling (termin**		**14.74**				**242**				**10,155**
	Total	**Line Eff:**	**94.47%**	**208.87**						**90**	**90**	

Note: Heat shrinking tube attaching is currently operated with withstand voltage device in withstand voltage checking station

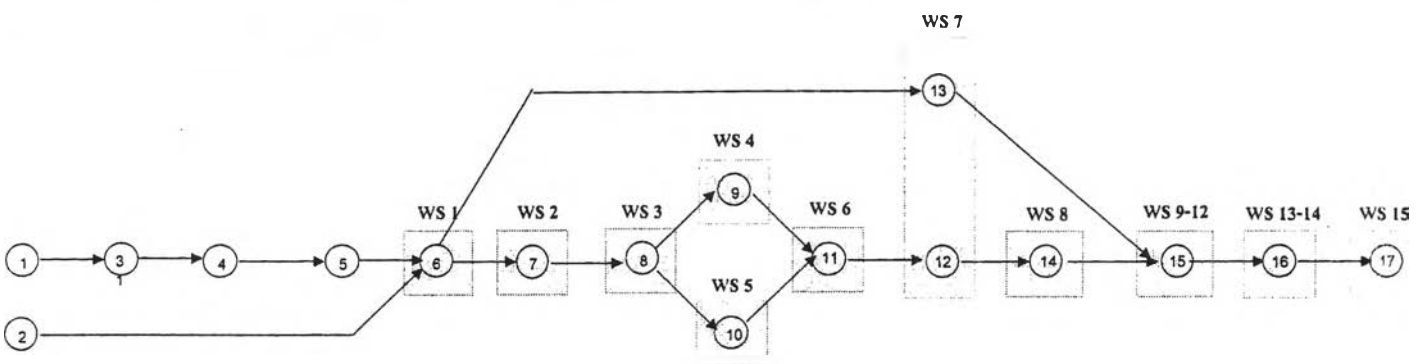
Precedence diagram for DY 20"/ Terminal board with leads/ Inspection for ITC



Defection Yoke Capacity Study (Type 8: DY 20"/ Terminal board / Inspection for ITC)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	**7,699**
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0	0	0	-
4	H-coil peeling off	2.54	0.5	5.08	709	99%	100%	702	7.0	0	0	-
5	Check Air-L	5.98	0.5	11.95	301	99%	100%	298	7.0	0	0	-
	Total	**Cell Eff:**	**100.00%**	**30.18**	**119**	**99%**	**100%**	**118.1**	**7.0**	**12**	**12**	**9,920**
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Magnet attaching	5.89	1	5.89	612	99%	100%	606	7.0			
	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
	Inspection	55.00	1	55.00	65	99%	100%	65	7.0	24	24	10,886
16	Bonding	21.12	1	21.12	170	99%	100%	169	7.0	12	12	14,175
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**H-coil terminal winding**		**14.61**				**244**				**10,247**
	Total	**Line Eff:**	**91.44%**	**200.36**						**90**	**90**	

Precedence diagram for DY 20"/ Terminal board / Inspection for ITC

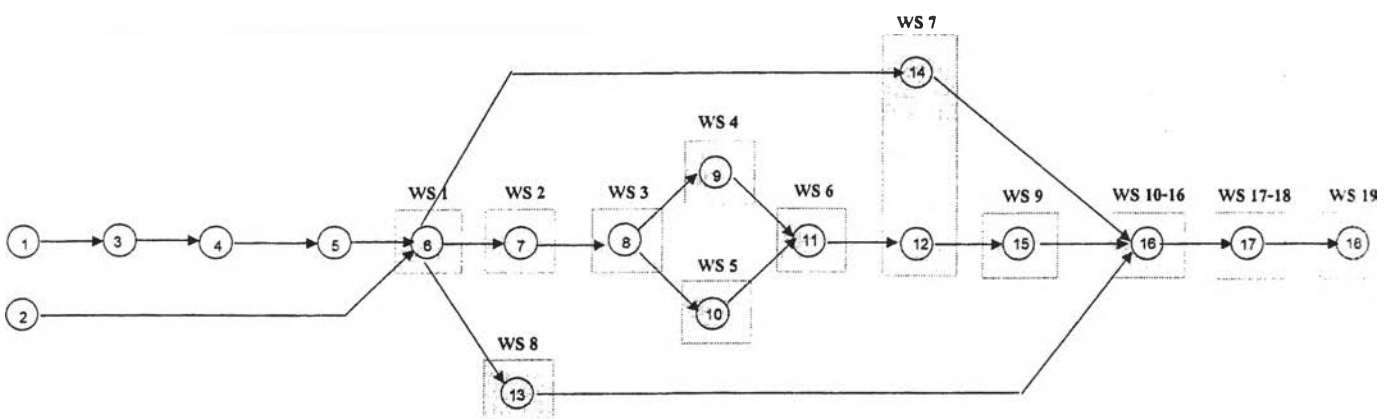


Defection Yoke Capacity Study (Type 9: DY 21"/ Terminal board with leads/ Inspection for customer)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		138.6				25			24	7,699
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0	0	0	-
4	H-coil peeling off	2.54	0.5	5.08	709	99%	100%	702	7.0	0	0	-
5	Check Air-L	5.98	0.5	11.95	301	99%	100%	298	7.0	0	0	-
	Total	**Cell Eff:**	**100.00%**	**30.18**	**119**	**99%**	**100%**	**118.1**	**7.0**	**12**	**12**	9,920
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Magnet attaching	11.77	1	11.77	306	99%	95%	288	7.0	6	6	12,082
14	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0			
15	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
16	Inspection	99.00	1	99.00	36	99%	100%	36	7.0	42	42	10,584
17	Bonding	29.92	1	29.92	120	99%	100%	119	7.0	12	12	10,006
18	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**Bonding**		29.92				119				10,006
	Total	**Line Eff:**	**94.13%**	267.56						114	114	

Note: Heat shrinking tube attaching is currently operated with withstand voltage device in withstand voltage checking station

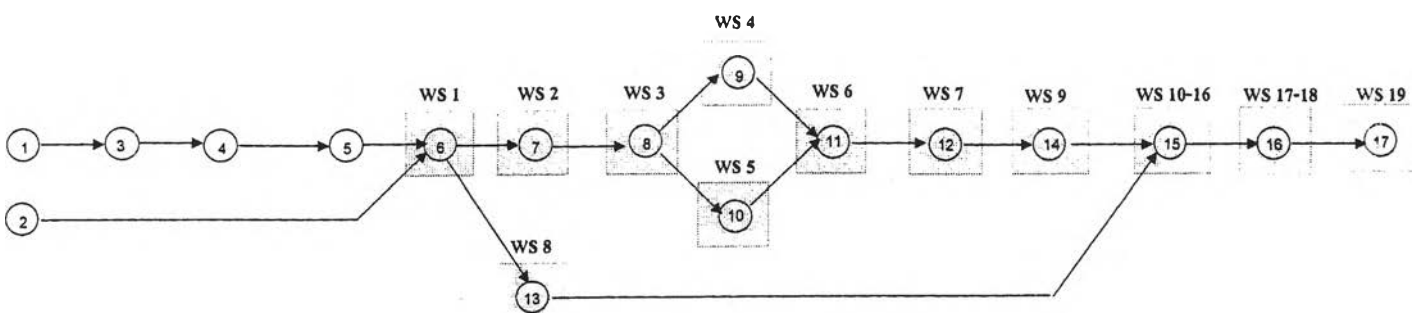
Precedence diagram for DY 21"/ Terminal board with leads/ Inspection for customer



Defection Yoke Capacity Study (Type 10: DY 21"/ Terminal board / Inspection for customer)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	H-coil winding		138.6				25			24	7,699
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0	0	0	-
4	H-coil peeling off	2.54	0.5	5.08	709	99%	100%	702	7.0	0	0	-
5	Check Air-L	5.98	0.5	11.95	301	99%	100%	298	7.0	0	0	-
	Total	Cell Eff:	100.00%	30.18	119	99%	100%	118.1	7.0	12	12	9,920
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Magnet attaching	11.77	1	11.77	306	99%	95%	288	7.0	6	6	12,082
14	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
	nspection	99.00	1	99.00	36	99%	100%	36	7.0	42	42	10,584
16	Bonding	29.92	1	29.92	120	99%	100%	119	7.0	12	12	10,006
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	Bonding		29.92				119				10,006
	Total	Line Eff:	91.13%	259.04						114	114	

Precedence diagram for DY 21"/ Terminal board / Inspection for customer

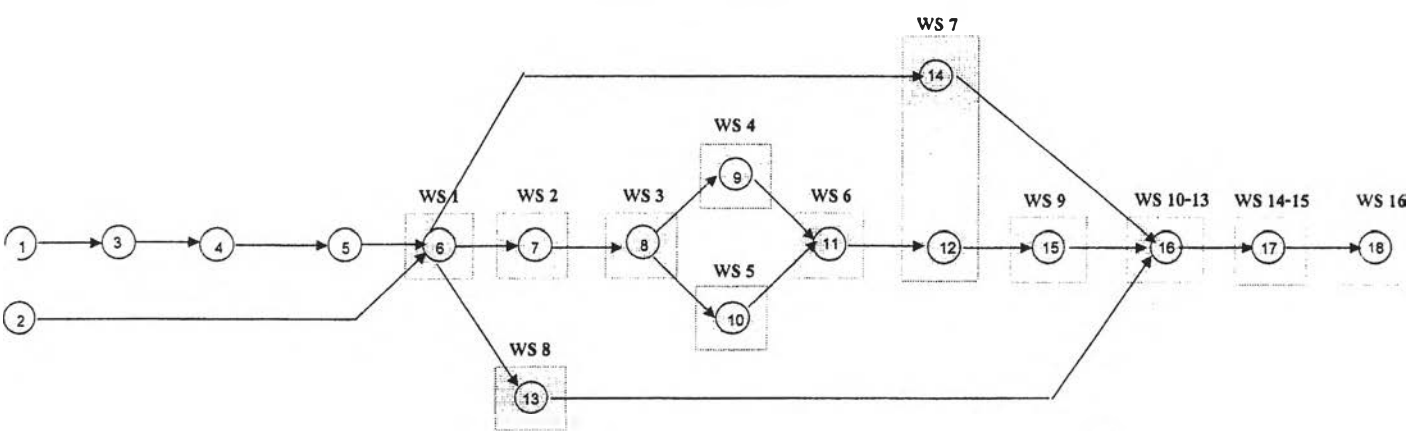


Defection Yoke Capacity Study (Type 11: DY 21"/ Terminal board with leads/ Inspection for ITC)

tem	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	**H-coil winding**		**138.6**				**25**			**24**	7,699
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0	0	0	-
4	H-coil peeling off	2.54	0.5	5.08	709	99%	100%	702	7.0	0	0	-
5	Check Air-L	5.98	0.5	11.95	301	99%	100%	298	7.0	0	0	-
	Total	**Cell Eff:**	**100.00%**	**30.18**	**119**	**99%**	**100%**	**118.1**	**7.0**	**12**	**12**	9,920
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal lead)	14.74	1	14.74	244	99%	100%	242	7.0	6	6	10,155
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Magnet attaching	11.77	1	11.77	306	99%	95%	288	7.0	6	6	12,082
14	Heat shrinking tube attaching	5.61	1	5.61	642	99%	100%	635	7.0	0	0	
	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
.o	Inspection	55.00	1	55.00	65	99%	100%	65	7.0	24	24	10,886
17	Bonding	27.72	1	27.72	130	99%	100%	129	7.0	12	12	10,800
18	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	**V-coil assembling (termin**		**14.74**				**242**				**10,155**
	Total	**Line Eff:**	**93.86%**	**221.36**						**96**	**96**	

Note: Heat shrinking tube attaching is currently operated with withstand voltage device in withstand voltage checking station

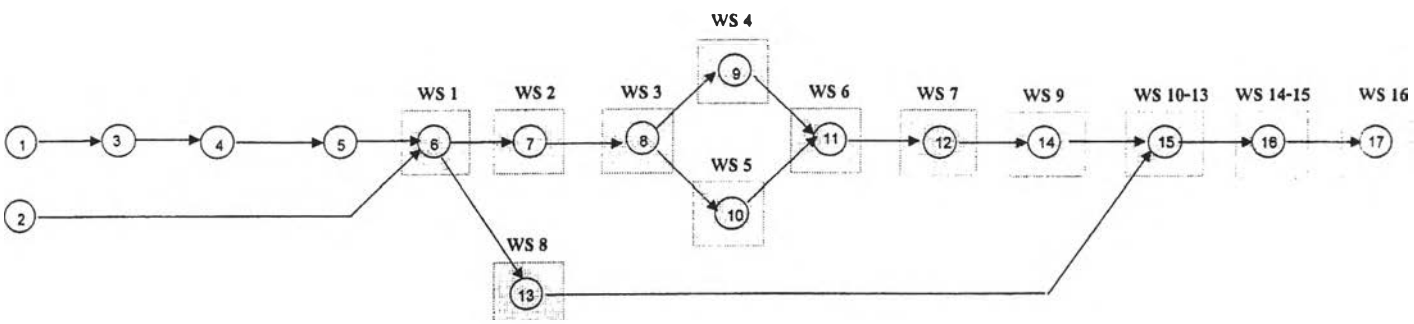
Precedence diagram for DY 21"/ Terminal board with leads/ Inspection for ITC



Defection Yoke Capacity Study (Type 12: DY 21"/ Terminal board / Inspection for ITC)

Item	Station	Cycle time (sec)	No. of pcs /Cycle	Throughput time (sec.)	UPH	Assume % Yield	Expect overall Eff%	Throughput UPH	Working hrs	Avl. Station	H/C	THoughput/ working hrs
Coil winding												
1	H-coil winding	69.3	0.5	138.60	26	100%	95%	25	24.0	13	9	7,699
2	V-coil winding	85.8	1	85.80	42	100%	95%	40	21.0	10	15	8,371
	Bottleneck	H-coil winding		138.6				25			24	7,699
Subassembly												
3	H-coil taping	6.57	0.5	13.15	274	99%	100%	271	7.0	0	0	-
4	H-coil peeling off	2.54	0.5	5.08	709	99%	100%	702	7.0	0	0	-
5	Check Air-L	5.98	0.5	11.95	301	99%	100%	298	7.0	0	0	-
	Total	Cell Eff:	100.00%	30.18	119	99%	100%	118.1	7.0	12	12	9,920
Assembly												
6	Seperator assembling	13.99	1	13.99	257	99%	100%	255	7.0	6	6	10,701
7	Magnetic plate assembling	12.32	1	12.32	292	99%	100%	289	7.0	6	6	12,150
8	V-coil assembling (terminal board)	11.84	1	11.84	304	99%	100%	301	7.0	6	6	12,647
9	H-coil terminal winding	14.61	1	14.61	246	99%	100%	244	7.0	6	6	10,247
10	V-coil terminal winding	13.56	1	13.56	265	99%	100%	263	7.0	6	6	11,036
11	Soldering	13.38	1	13.38	269	99%	100%	266	7.0	6	6	11,185
12	Withstand voltage checking	14.53	1	14.53	248	99%	100%	245	7.0	6	6	10,301
13	Magnet attaching	11.77	1	11.77	306	99%	95%	288	7.0	6	6	12,082
14	Cross talk adjustment & hot melt fixing	10.90	1	10.90	330	99%	100%	327	7.0	6	6	13,732
5	Inspection	55.00	1	55.00	65	99%	100%	65	7.0	24	24	10,886
16	Bonding	27.72	1	27.72	130	99%	100%	129	7.0	12	12	10,800
17	Packing	13.22	1	13.22	272	99%	100%	270	7.0	6	6	11,323
	Bottleneck	H-coil terminal winding		14.61				244				10,247
	Total	Line Eff:	91.06%	212.84						96	96	

Precedence diagram for DY 21"/ Terminal board / Inspection for ITC



BIOGRAPHY

Sasithorn Siripanich was born on April 18th, 1975 in Burirum, Thailand. She graduated from Kasetsart University in 1997 with a Bachelor Degree in Industrial Engineering.