

# Contents

PAGE

1.	Rationalising assembly – does the need exist?	9
1.1	Does the need exist?	10
1.2	In which areas?	11
2.	What is assembly?	15
2.1	What is assembly?	16
2.2	Why assemble?	20
3.	Assembly operations and equipment	25
3.1	The assembly process	27
3.2	Assembly operations	30
3.3	Assembly equipment	39
4.	Assembly systems	45
4.1	Assembly systems	47
4.2	The structure of assembly systems	52
4.3	Assembly systems characteristics	58
4.4	Examples of assembly systems	59
5.	What is – Design for ease of assembly?	65
5.1	Design for ease of assembly – rationalising assembly	67
5.2.	When can design for ease of assembly be applied?	68
5.3	What is an optimal result?	69
5.4	Three areas of application	72
6.	Design for ease of assembly – goals – product assortment	73
6.1	Criteria for optimal assembly	75
6.2	Achieving HIGH PRODUCT QUALITY	75
6.3	Attainment of HIGH PRODUCTIVITY	79
6.4	Attainment of HIGH PROFITABILITY	85
6.5	Achieving a GOOD WORKING ENVIRONMENT	91
6.6	Review	94

7.	Design for ease of assembly	
	– systemize the products structure	95
	7.1 Is assembly necessary?	96
	7.2 Some important product factors	99
	7.3 Two general principles	101
	7.4 Choice of product structure	103
	7.5 Choice of joining method	120
	7.6 Review	128
8.	Design for ease of assembly	
	– design the components so as to be suited to assembly	129
	8.1 The connection between product structure and component design	130
	8.2 Manual or automatic assembly	133
	8.3 Considering assembly operations	133
	8.4 Review	197
9.	Integrated product development	179
	9.1 Procedure for design for ease of assembly	150
	9.2 Case Study: Oil pump	153
	9.3 Integrated product development	158
	9.4 Case Study: The ECG Electrode	159
	9.5 Possibilities for rationalisation in a wider perspective	171
	9.6 Formulation of development plans	175
10.	Development tendencies – Conclusions	177
	10.1 The Future	178
	10.2 Conclusion	182
	Word List	187
	References and Literature	188