

<i>Acknowledgment</i>	<i>xii</i>
<i>Foreword</i>	<i>xv</i>
1 Spreading and cutting	1
1.1 Introduction to apparel industry	1
1.2 Spreading	2
1.2.1 Spreading methods	3
1.2.2 Requirements of fabric spreading	3
1.2.3 Modes of spreading	5
1.2.4 Spreading methods	9
1.3 Cutting	17
1.3.1 Requirements for fabric cutting	17
1.4 Methods of fabric cutting	18
1.4.1 Hand cutting/manual cutting	19
1.4.2 Machine cutting	19
1.4.3 Stationary cutting machines	37
1.4.4 Position markers used in cutting department	69
References	76
2 Sewing machine – mechanisms and settings	79
2.1 Introduction	79
2.2 History and development of the sewing machine	80
2.3 Classification of sewing machine	81
2.3.1 Sewing machines classification based on their bed type	81
2.3.2 Horizontal bed sewing machines	81
2.3.3 Vertical bed machine	86
2.3.4 Sewing machine – classification based on operator control	86

2.4	Single needle lockstitch machine	87
2.4.1	Parts and functions	87
2.4.2	Sewing needles	96
2.4.3	Single needle lockstitch sewing machine working mechanism	101
2.4.4	Important setting points in single needle lockstitch machine	104
2.5	Stitch-formation in single needle lockstitch machine	112
2.5.1	Thread control devices	113
2.5.2	Needles	113
2.5.3	Lower stitch-forming devices	113
2.5.4	Stitch tongues or chaining plates	114
2.5.5	Stitch formation	114
2.6	Working mechanism of double needle	116
2.6.1	Important setting points in double needle lockstitch machine	119
2.7	Overlock machine	120
2.7.1	Selecting an overlock machine	121
2.7.2	Special features of overlock machines	122
2.7.3	Over lock machine – special parts	123
2.7.4	Working mechanism of overlock machine	129
2.7.5	Chain stitch machine timing diagram	137
2.8	Flatlock sewing machine	138
2.8.1	Working mechanism of flatlock machine	139
2.8.2	Height of the needle bar	140
2.8.3	Adjusting the stitch length	142
2.8.4	Adjusting the differential feed	144
2.8.5	Needle to looper timing and setting	146
2.8.6	Top looper or spreader settings	149
2.9	Summary	151
	References	151
3	Feed mechanism and lubrication systems	153

3.1	Elements of feed mechanism	153
3.1.1	Presser foot	153
3.1.2	Feed dog	154
3.1.3	Throat plate	156
3.2	Types of feed mechanism	157
3.2.1	Manual feed or free motion or freehand or darning feed	157
3.2.2	Drop feed	158
3.2.3	Differential feed	159
3.2.4	Top feed	160
3.2.5	Needle feed	162
3.2.6	Compound feed	164
3.2.7	Unison feed	165
3.2.8	Puller feed	166
3.2.9	Wheel feed	168
3.2.10	Cup feed	169
3.2.11	Clamp feed	170
3.2.12	Machine speed, rate of feed and stitch size regulation	170
3.3	Sewing machine lubrication system	171
3.4	Types of lubricating system	171
3.4.1	Manual application	171
3.4.2	Wick system	172
3.4.3	Gravity trip	172
3.4.4	Bath system	172
3.4.5	Automatic system	173
3.5	Summary	173
	References	173
4	Sewing machine attachments	175
4.1	Sewing machine attachments	175
4.2	Attachment classification	176

4.2.1	Attachment types based on their movement during sewing operation	176
4.2.2	Attachment classification based on their function	177
4.3	Guide attachments	178
4.4	Positioning attachments	179
4.4.1	Right angle bias binder	179
4.4.2	Single-fold bias binder	180
4.4.3	Tape binder	180
4.4.4	Loop folder	181
4.4.5	Straight folder	181
4.4.6	Belt loop folder	182
4.4.7	Cord edge piping attachment	182
4.4.8	Striping attachments	183
4.4.9	Fell attachment – folders	184
4.5	Shirring and ruffling attachments	187
4.6	Tucking	190
4.6.1	Knife tucks/pleat tucking	190
4.6.2	Air tucks	192
4.7	Preparation and finishing attachments	193
4.7.1	Pinking	193
4.7.2	Pressing attachments	194
4.7.3	Thread master	194
4.7.4	Thread cutting attachment	194
4.7.5	Automatic stackers	196
4.8	Presser feet	197
4.8.1	Functions of presser foot	197
4.9	Types of presser feet	198
4.9.1	Compensating presser foot	198
4.9.2	Teflon foot	200
4.9.3	Gathering foot	201

4.9.4	Piping/corded foot	203
4.9.5	Edge guide presser foot	203
4.9.6	Zipper presser foot	204
4.9.7	Hemmer foot	205
4.9.8	Quilting foot	206
4.9.9	Pin-tuck foot	207
4.9.10	Binding foot	208
4.9.11	Zigzag foot	210
4.9.12	Button hole presser foot	211
4.9.13	Button attaching foot	213
4.9.14	Overlock foot	214
4.9.15	Edge stitch/blind hem stitch	214
4.9.16	Felling foot – lap seam foot	216
4.9.17	Invisible zipper	217
4.9.18	Beading foot	218
4.9.19	Darning foot	219
4.9.20	Open toe foot – open toe applique foot/satin foot	219
4.9.21	Walking foot – even feed foot	220
4.9.22	Quarter-inch foot	222
4.9.23	The fringe/looped foot	222
4.9.24	Curve master foot	223
4.9.25	Nylon ring foot	224
4.10	Summary	225
	Reference	225
5	Sewing machine maintenance	227
5.1	Sewing machine maintenance	227
	5.1.1 Causes of machine malfunction	227
5.2	Classification of machine maintenance	229
	5.2.1 Preventive maintenance	229
	5.2.2 Breakdown maintenance	231

5.3	General sewing machine cleaning	231
5.3.1	Bobbin and hook area	232
5.3.2	Face plate area	232
5.3.3	Hand wheel area	233
5.4	Preventive maintenance of sewing machine	234
5.5	Final checks before running machine	243
5.6	Other systems	245
5.6.1	Material trimming systems	245
5.6.2	Thread trimming system	245
5.6.3	Folders and guides	245
5.7	Trouble shooting sewing problems	245
5.8	Other sewing defects due to machine problems	254
5.8.1	Looped stitches	255
5.8.2	Loop or knot on top surface of fabric	255
5.8.3	Loops or knots on the underside of the fabric	256
5.8.4	Skipped stitches	257
5.8.5	Fabric puckering	258
5.8.6	Fabric flagging	263
5.9	Summary	264
	References	264
6	Finishing machineries	265
6.1	Finishing machineries	265
6.2	Functions of pressing	265
6.3	Classification of garments based on pressing	266
6.4	Ways of pressing	267
6.5	Pressing equipment and methods	267
6.5.1	Iron	267
6.5.2	Steam press/buck press	267
6.5.3	Carousel press	268
6.5.4	Trouser pressing	270
6.5.5	Double legger-pressing machine	271

6.5.6	Creasing machines	272
6.5.7	Steam air finisher/form pressing machine/dolly press	273
6.5.8	Steam tunnel	275
6.5.9	Pleating	275
6.5.10	Permanent press	276
6.6	Fusing machineries	277
6.6.1	Requirements of fusing	277
6.7	The fusing process	278
6.7.1	Base fabric of the interlining	278
6.7.2	Type of fusible resin	279
6.7.3	Methods of applying resins to base cloths	280
6.8	Means of fusing	281
6.8.1	Temperature	281
6.8.2	Pressure	281
6.8.3	Time	281
6.9	Fusing equipment	282
6.9.1	Specialized fusing presses	282
6.9.2	Hand iron	286
6.9.3	Steam press	286
6.10	Methods of fusing	287
6.10.1	Single fusing	287
6.10.2	Reverse fusing	287
6.10.3	Sandwich fusing	287
6.10.4	Double fusing	287
6.11	Quality control in fusing	288
6.11.1	Temperature control	288
6.11.2	Pressure control	288
6.11.3	Time control	288
	Reference	288
7	Packing machines	291

7.1	Packaging of products	291
7.2	Types of package	292
	7.2.1 Merchandising package	292
	7.2.2 Shipping package	292
7.3	Packaging material	295
7.4	Merchandising packaging	296
7.5	Shipment packing	297
7.6	Packing equipment	298
	7.6.1 Garment folding equipment	298
	7.6.2 Card inserting machine	299
	7.6.3 Garment stacking machine	299
	7.6.4 Garment loading/bagging equipment	300
	7.6.5 Garment transport conveyor	302
	7.6.6 Garment tagging machine	303
	7.6.7 Container sealer	304
	7.6.8 Carton/container strapping machine	305
	7.6.9 Container conveyor	306
	7.6.10 Vacuum packing	308
	7.6.11 Selecting the package design	309
7.7	Summary	310
	References	310
	Index	311