

DAFTAR ISI

HALAMAN JUDUL	i
LEMBAR PERSOALAN	ii
LEMBAR PENGESAHAN	iii
PERNYATAAN KEASLIAN TUGAS AKHIR	iv
LEMBAR PERSEMBAHAN	v
LEMBAR MOTTO	vi
KATA PENGANTAR	vii
<i>ABSTRACT</i>	ix
INTISARI	x
DAFTAR ISI	xi
DAFTAR GAMBAR	xv
DAFTAR TABEL	xxxiv
 BAB I PENDAHULUAN	 1
1.1. Latar Belakang	1
1.2. Perumusan Masalah	2
1.3. Maksud dan Tujuan	2
1.4. Batasan Masalah	2
1.5. Metode Penulisan Laporan	2
1.6. Sistematika Penulisan	3
 BAB II TEORI DASAR <i>SOFTWARE CREO PARAMETRIC 2.0</i>	 5
2.1. Pengenalan <i>software Creo Parametric 2.0</i>	5
2.2. Keunggulan <i>software Creo Parametric 2.0</i>	6
2.3. Kekurangan <i>software Creo Parametric 2.0</i>	7
2.4. Pengaplikasian <i>software Creo Parametric 2.0</i>	8

BAB III FEATURES CREO PARAMETRIC 2.0	9
3.1. Membuka <i>software Creo Parametric 2.0</i>	9
3.2. Membuat Objek Baru	10
3.3. Mengenal <i>Interface Software Creo Parametric 2.0</i>	12
3.4. Mengenal <i>Solid Editing</i>	13
3.4.1. <i>Basic Solid</i>	13
3.4.2. <i>Sketch Feature</i>	15
3.4.2.1. <i>Sketch Plane and Reference</i>	15
3.4.2.2. <i>Sketch Dialog Box</i>	15
3.4.2.3. <i>Sketch Ribbon</i>	16
3.4.2.4. <i>Sketching Geometry and Editing Geometry</i>	16
3.4.3. <i>Extrude Feature</i>	17
3.4.4. <i>Revolve Feature</i>	18
3.4.5. <i>Shell feature</i>	19
3.4.6. <i>Swept Blend Feature</i>	20
3.4.7. <i>Sweeps Feature</i>	21
3.4.8. <i>Helical Sweep Feature</i>	21
3.4.9. <i>Duplicating Features</i>	22
3.4.9.1. <i>Mirror feature</i>	22
3.4.9.2. <i>Copy and Paste Feature</i>	23
3.4.9.3. <i>Patterns Feature</i>	23
3.4.10. <i>Creating Assemblies</i>	24
3.4.10.1. <i>Creating a New Assembly</i>	25
3.4.10.2. <i>Component placement</i>	25
3.4.11. <i>Miscellaneous Feature</i>	27
3.4.11.1. <i>The Warp Feature</i>	27
3.4.11.2. <i>Model Mass Properties</i>	28
3.4.12. <i>Assembly Bill of Material and Cosmetics</i>	29
3.4.12.1. <i>Assembly Bill of Material feature</i>	29
3.4.12.2. <i>Model colors feature</i>	30
3.4.12.3. <i>Explode views feature</i>	30

3.4.12.4. <i>Creating cross section feature</i>	31
3.5. Menghitung massa benda	33
BAB IV REDRAWING AND ASSEMBLING PART MESIN BOR	35
4.1. Mengenal <i>Redrawing</i> Mesin Bor	35
4.2. Bagian-Bagian Utama Mesin Bor	36
4.3. <i>Redrawing Parts</i>	37
4.3.1. <i>Bolt M12</i>	37
4.3.2. <i>Column Support Base</i>	43
4.3.3. <i>Base</i>	47
4.3.4. <i>Table Support</i>	61
4.3.5. <i>Table</i>	74
4.3.6. <i>Head</i>	84
4.3.7. <i>Pinion shaft</i>	115
4.3.8. <i>Feed handle</i>	123
4.3.9. <i>Knob</i>	126
4.3.10. <i>Quill shaft</i>	128
4.3.11. <i>Spindle shaft</i>	135
4.3.12. <i>Stop collar</i>	140
4.3.13. <i>Stop rod</i>	143
4.3.14. <i>Pulley insert</i>	146
4.3.15. <i>Quill spring cap</i>	151
4.3.16. <i>Switch box</i>	155
4.3.17. <i>Pulley cover bawah</i>	157
4.3.18. <i>Pulley cover atas</i>	165
4.3.19. <i>Spindle pulley</i>	170
4.3.20. <i>Motor frame</i>	173
4.3.21. <i>Motor cover</i>	179
4.3.22. <i>Rotor</i>	184
4.3.23. <i>Motor pulley</i>	187
4.3.24. <i>Belt</i>	191

4.3.25. <i>Stop motor</i>	192
4.3.26. <i>Belt tension lock screw</i>	194
4.4. <i>Proses Assembling Part</i>	198
4.4.1. <i>Assembling base</i>	198
4.4.2. <i>Assembling table</i>	200
4.4.3. <i>Assembling motor</i>	203
4.4.4. <i>Assembling head</i>	207
4.4.5. <i>Assembling total</i>	224
 BAB V PENUTUP	 234

DAFTAR GAMBAR

Gambar 3.1. Tampilan <i>Start Menu</i>	9
Gambar 3.2. Tampilan awal <i>software Creo Parametric 2.0</i>	9
Gambar 3.3. Kotak dialog <i>New Object</i>	10
Gambar 3.4. Memilih satuan gambar	10
Gambar 3.5. Tampilan <i>Interface Creo Parametric 2.0</i>	11
Gambar 3.6. Kotak dialog <i>Model Display</i>	11
Gambar 3.7. <i>Interface Creo Parametric 2.0</i>	12
Gambar 3.8. <i>Default position datum plane</i>	15
Gambar 3.9. <i>Sketch Dialog Box</i>	16
Gambar 3.10. <i>Sketch Ribbon</i>	16
Gambar 3.11. <i>Extrude Ribbon</i>	17
Gambar 3.12. <i>Revolve Ribbon</i>	18
Gambar 3.13. <i>Dashboard tool shell feature</i>	19
Gambar 3.14. Contoh <i>part</i> hasil <i>shell</i>	20
Gambar 3.15. <i>Swept Blend Ribbon</i>	20
Gambar 3.16. <i>Part</i> hasil <i>swept blend</i>	20
Gambar 3.17. <i>Sweeps Ribbon</i>	21
Gambar 3.18. <i>Part</i> hasil <i>sweep</i>	21
Gambar 3.19. <i>Helical Sweep Ribbon</i>	22
Gambar 3.20. <i>Part</i> hasil <i>helical sweep</i>	22
Gambar 3.21. <i>Part</i> dengan <i>mirror feature</i>	23
Gambar 3.22. <i>Copy and Paste Feature</i>	23
Gambar 3.23. <i>Patterns ribbon</i>	24
Gambar 3.24. <i>New Dialog Box</i>	25
Gambar 3.25. <i>Interface Assembly</i>	25
Gambar 3.26. <i>Open part dialog box</i>	26
Gambar 3.27. <i>Component Placement</i>	26
Gambar 3.28. <i>Constraint types</i>	26
Gambar 3.29. <i>Warp ribbon</i>	27

Gambar 3.30. <i>Mass properties</i>	28
Gambar 3.31. <i>Bill Of Material</i>	29
Gambar 3.32. <i>Bill Of Material file</i>	29
Gambar 3.33. <i>Appearance Gallery</i>	30
Gambar 3.34. <i>View manager box</i>	30
Gambar 3.35. <i>View manager properties</i>	31
Gambar 3.36. <i>Explode views</i>	31
Gambar 3.37. <i>Section</i>	31
Gambar 3.38. <i>Section ribbon</i>	32
Gambar 3.39. <i>Cross section</i>	32
Gambar 3.40. <i>Display pada window</i>	33
Gambar 3.41. <i>Display model properties</i>	33
Gambar 3.42. <i>Display material</i>	34
Gambar 3.43. <i>Massa benda</i>	34
Gambar 4.1 <i>Mesin bor set</i>	35
Gambar 4.3.1. <i>Bolt M12</i>	37
Gambar 4.3.1.1. <i>Sketch</i>	38
Gambar 4.3.1.2. <i>Extrude</i>	38
Gambar 4.3.1.3. <i>Sketch</i>	38
Gambar 4.3.1.4. <i>Extrude</i>	39
Gambar 4.3.1.5. <i>Sketch</i>	39
Gambar 4.3.1.6. <i>Sketch</i>	40
Gambar 4.3.1.7. <i>Sweep</i>	40
Gamabar 4.3.1.8. <i>Sketch</i>	40
Gambar 4.3.1.9. <i>Sketch</i>	41
Gambar 4.3.1.10. <i>Sweep</i>	41
Gambar 4.3.1.11. <i>Chamfer</i>	41
Gambar 4.3.1.12. <i>Sketch</i>	42
Gambar 4.3.1.13. <i>Sketch</i>	42
Gambar 4.3.1.14. <i>Helical sweep</i>	43
Gambar 4.3.2. <i>Column support base</i>	43

Gambar 4.3.2.1. Sketch	43
Gambar 4.3.2.2. Extrude	44
Gambar 4.3.2.3. Sketch	44
Gambar 4.3.2.4. Extrude to intersect with all surface	44
Gambar 4.3.2.5. Pattern axis	45
Gambar 4.3.2.6. Sketch	45
Gambar 4.3.2.7. Extrude	45
Gambar 4.3.2.8. Chamfer 0.5 mm	46
Gambar 4.3.2.9. Chamfer 1 mm	46
Gambar 4.3.2.10. Round 1 mm	46
Gambar 4.3.3. Base	47
Gambar 4.3.3.1. Sketch	47
Gambar 4.3.3.2. Extrude	47
Gambar 4.3.3.3. Chamfer 15 mm	48
Gambar 4.3.3.4. Chamfer 35 mm	48
Gambar 4.3.3.5. Trajectory	48
Gambar 4.3.3.6 Sketch	49
Gambar 4.3.3.7. Sweep	49
Gambar 4.3.3.8. Sketch	49
Gambar 4.3.3.9. Extrude to intersect with all surface	50
Gambar 4.3.3.10. Sketch	50
Gambar 4.3.3.11. Extrude to intersect with all surface	50
Gambar 4.3.3.12. Sketch	51
Gambar 4.3.3.13. Extrude	51
Gambar 4.3.3.14. Sketch	51
Gambar 4.3.3.15. Extrude	52
Gambar 4.3.3.16. New plane	52
Gambar 4.3.3.17. Mirror	52
Gambar 4.3.3.18. Sketch	53
Gambar 4.3.3.19. Extrude	53
Gambar 4.3.3.20. Sketch	53

Gambar 4.3.3.21. Extrude	54
Gambar 4.3.3.22. Mirror	54
Gambar 4.3.3.23. Sketch	54
Gambar 4.3.3.24. Extrude	55
Gambar 4.3.3.25. Mirror	55
Gambar 4.3.3.26. Sketch	55
Gambar 4.3.3.27. Extrude remove material	56
Gambar 4.3.3.28. Sketch	56
Gambar 4.3.3.29. Extrude to intersect with all surface	57
Gambar 4.3.3.30. Round 5 mm	57
Gambar 4.3.3.31. Round 1 mm	57
Gambar 4.3.3.32. Sketch	58
Gambar 4.3.3.33. Extrude to intersect with all surface	58
Gambar 4.3.3.34. Sketch	59
Gambar 4.3.3.35. Sketch	59
Gambar 4.3.3.36. Helical sweep	59
Gambar 4.3.3.37. Group	60
Gambar 4.3.3.38. Pattern axis	60
Gambar 4.3.4. Table support	61
Gambar 4.3.4.1. Sketch	61
Gambar 4.3.4.2. Extrude	62
Gambar 4.3.4.3. New plane	62
Gambar 4.3.4.4. Sketch	62
Gambar 4.3.4.5. Extrude up to next surface	63
Gambar 4.3.4.6. Sketch	63
Gambar 4.3.4.7. Extrude	63
Gambar 4.3.4.8. Sketch	64
Gambar 4.3.4.9. Extrude	64
Gambar 4.3.4.10. Sketch	64
Gambar 4.3.4.11. Extrude up to next surface	65
Gambar 4.3.4.12. Sketch	65

Gambar 4.3.4.13. Sketch	65
Gambar 4.3.4.14. Helical sweep	66
Gambar 4.3.4.15. New plane	66
Gambar 4.3.4.16. Sketch	66
Gambar 4.3.4.17. Extrude up to next surface	67
Gambar 4.3.4.18. Sketch	67
Gambar 4.3.4.19. Extrude	68
Gambar 4.3.4.20. Sketch	68
Gambar 4.3.4.21. Extrude up to next surface	68
Gambar 4.3.4.22. Sketch	69
Gambar 4.3.4.23. Extrude up to next surface	69
Gambar 4.3.4.24. Sketch	69
Gambar 4.3.4.25. Extrude up to next surface	70
Gambar 4.3.4.26. New plane	70
Gambar 4.3.4.27. Sketch	70
Gambar 4.3.4.28. Sketch	71
Gambar 4.3.4.29. Helical sweep	71
Gambar 4.3.4.30. Sketch	71
Gambar 4.3.4.31. Trajectory	72
Gambar 4.3.4.32. Sketch	72
Gambar 4.3.4.33. Sweep	72
Gambar 4.3.4.34. Round 0.5 mm	73
Gambar 4.3.4.35. Round 2 mm	73
Gambar 4.3.4.36. Chamfer 0.5 mm	74
Gambar 4.3.5. Table	74
Gambar 4.3.5.1. Sketch	74
Gambar 4.3.5.2. Extrude	75
Gambar 4.3.5.3. Sketch	75
Gambar 4.3.5.4. Extrude to intersect with all surface	76
Gambar 4.3.5.5. Round 7.5 mm	76
Gambar 4.3.5.6. Sketch	76

Gambar 4.3.5.7. Extrude	77
Gambar 4.3.5.8. New plane	77
Gambar 4.3.5.9. Sketch	77
Gambar 4.3.5.10. Extrude on both sides	78
Gambar 4.3.5.11. Sketch	78
Gambar 4.3.5.12. Extrude to intersect with all surface	78
Gambar 4.3.5.13. Sketch	79
Gambar 4.3.5.14. Extrude	79
Gambar 4.3.5.15. Sketch	79
Gambar 4.3.5.16. Sketch	80
Gambar 4.3.5.17. New plane	80
Gambar 4.3.5.18. Sketch	80
Gambar 4.3.5.19. Profil rib	81
Gambar 4.3.5.20. New plane	81
Gambar 4.3.5.21. Sketch	81
Gambar 4.3.5.22. Profile rib	82
Gambar 4.3.5.23. Mirror	82
Gambar 4.3.5.24. Sketch	82
Gambar 4.3.5.25. Extrude	83
Gambar 4.3.5.26. Round 50 mm	83
Gambar 4.3.5.27. Chamfer 1 mm	83
Gambar 4.3.6. Head	84
Gambar 4.3.6.1. Sketch	84
Gambar 4.3.6.2. Extrude on both sides	85
Gambar 4.3.6.3. Shell	85
Gambar 4.3.6.4. Sketch	85
Gambar 4.3.6.5. Extrude	86
Gambar 4.3.6.6. Sketch	86
Gambar 4.3.6.7. Extrude	87
Gambar 4.3.6.8. Sketch	87
Gambar 4.3.6.9. Extrude	87

Gambar 4.3.6.10. Sketch	88
Gambar 4.3.6.11. Extrude	88
Gambar 4.3.6.12. Sketch	88
Gambar 4.3.6.13. Extrude	89
Gambar 4.3.6.14. Sketch	89
Gambar 4.3.6.15. Extrude	89
Gambar 4.3.6.16. Sketch	90
Gambar 4.3.6.17. Extrude	90
Gambar 4.3.6.18. Sketch	90
Gambar 4.3.6.19. Extrude	91
Gambar 4.3.6.20. Sketch	91
Gambar 4.3.6.21. Extrude	91
Gambar 4.3.6.22. Sketch	92
Gambar 4.3.6.23. Extrude	92
Gambar 4.3.6.24. Sketch	92
Gambar 4.3.6.25. Extrude to intersect with all surface	93
Gambar 4.3.6.26. Sketch	93
Gambar 4.3.6.27. Extrude	93
Gambar 4.3.6.28. New plane	94
Gambar 4.3.6.29. Sketch	94
Gambar 4.3.6.30. Sketch	94
Gambar 4.3.6.31. Helical sweep	95
Gambar 4.3.6.32. Sketch	95
Gambar 4.3.6.33. Extrude	95
Gambar 4.3.6.34. Sketch	96
Gambar 4.3.6.35. Extrude	96
Gambar 4.3.6.36. Sketch	96
Gambar 4.3.6.37. Extrude	97
Gambar 4.3.6.38. Sketch	97
Gambar 4.3.6.39. Extrude	97
Gambar 4.3.6.40. New plane	98

Gambar 4.3.6.41. Sketch	98
Gambar 4.3.6.42. Sketch	98
Gambar 4.3.6.43. Helical sweep	99
Gambar 4.3.6.44. Group	99
Gambar 4.6.3.45. Pattern direction	100
Gambar 4.3.6.46. Sketch	100
Gambar 4.3.6.47. Extrude	100
Gambar 4.3.6.48. New plane	101
Gambar 4.3.6.49. Sketch	101
Gambar 4.3.6.50. Extrude	101
Gambar 4.3.6.51. Sketch	102
Gambar 4.3.6.52. Extrude	102
Gambar 4.3.6.53. New plane	102
Gambar 4.3.6.54. Sketch	103
Gambar 4.3.6.55. Sketch	103
Gambar 4.3.6.56. Helical sweep	103
Gambar 4.3.6.57. Sketch	104
Gambar 4.3.6.58. Sketch	104
Gambar 4.3.6.59. Helical sweep	104
Gambar 4.3.6.60. Sketch	105
Gambar 4.3.6.61. Extrude	105
Gambar 4.3.6.62. New plane	105
Gambar 4.3.6.63. Sketch	106
Gambar 4.3.6.64. Sketch	106
Gambar 4.3.6.65. Helical sweep	106
Gambar 4.3.6.66. Sketch	107
Gambar 4.3.6.67. Extrude	107
Gambar 4.3.6.68. New plane	107
Gambar 4.3.6.69. Sketch	108
Gambar 4.3.6.70. Sketch	108
Gambar 4.3.6.71. Helical sweep	108

Gambar 4.3.6.72. <i>New group</i>	109
Gambar 4.3.6.73. <i>Pattern direction</i>	109
Gambar 4.3.6.74. <i>Sketch</i>	109
Gambar 4.3.6.75. <i>Extrude</i>	110
Gambar 4.3.6.76. <i>New plane</i>	110
Gambar 4.3.6.77. <i>Sketch</i>	110
Gambar 4.3.6.78. <i>Sketch</i>	111
Gambar 4.3.6.79. <i>Helical sweep</i>	111
Gambar 4.3.6.80. <i>New group</i>	111
Gambar 4.3.6.81. <i>Pattern direction</i>	112
Gambar 4.3.6.82. <i>New plane</i>	112
Gambar 4.3.6.83. <i>Sketch</i>	113
Gambar 4.3.6.84. <i>Sketch</i>	113
Gambar 4.3.6.85. <i>Helical sweep</i>	113
Gambar 4.3.6.86. <i>Pattern direction</i>	114
Gambar 4.3.6.87. <i>Round 1 mm</i>	114
Gambar 4.3.6.88. <i>Chamfer 1 mm</i>	115
Gambar 4.3.7. <i>Pinion shaft</i>	115
Gambar 4.3.7.1. <i>Sketch</i>	115
Gambar 4.3.7.2. <i>Revolve</i>	116
Gambar 4.3.7.3. <i>New plane</i>	116
Gambar 4.3.7.4. <i>Sketch</i>	116
Gambar 4.3.7.5. <i>Extrude</i>	117
Gambar 4.3.7.6. <i>Sketch</i>	117
Gambar 4.3.7.7. <i>Sketch</i>	117
Gambar 4.3.7.8. <i>Helical sweep</i>	118
Gambar 4.3.7.9. <i>New group</i>	118
Gambar 4.3.7.10. <i>Pattern axis</i>	118
Gambar 4.3.7.11. <i>Sketch</i>	119
Gambar 4.3.7.12. <i>Sketch</i>	119
Gambar 4.3.7.13. <i>Sketch</i>	120

Gambar 4.3.7.14. Helical sweep	120
Gambar 4.3.7.15. Sketch	120
Gambar 4.3.7.16. Extrude up to next surface	121
Gambar 4.3.7.17. Chamfer	121
Gambar 4.3.7.18. Pattern axis	121
Gambar 4.3.7.19. Round	122
Gambar 4.3.7.20. Pattern axis	122
Gambar 4.3.7.21. Chamfer	122
Gambar 4.3.8. Feed handle	123
Gambar 4.3.8.1. Sketch	123
Gambar 4.3.8.2. Extrude on both sides	123
Gambar 4.3.8.3. Sketch	124
Gambar 4.3.8.4. Sketch	124
Gambar 4.3.8.5. Helical sweep	124
Gambar 4.3.8.6. Sketch	125
Gambar 4.3.8.7. Sketch	125
Gambar 4.3.8.8. Helical sweep	125
Gambar 4.3.9. Knob	126
Gambar 4.3.9.1. Sketch	126
Gambar 4.3.9.2. Revolve	126
Gambar 4.3.9.4. Chamfer	127
Gambar 4.3.9.5. Sketch	127
Gambar 4.3.9.5. Sketch	127
Gambar 4.3.9.6. Helical sweep	128
Gambar 4.3.10. Quill shaft	128
Gambar 4.3.10.1. Sketch	129
Gambar 4.3.10.2. Extrude	129
Gambar 4.3.10.3. New plane	129
Gambar 4.3.10.4. Sketch	130
Gambar 4.3.10.5. Extrude	130
Gambar 4.3.10.6. Sketch	130

Gambar 4.3.10.7. Extrude	131
Gambar 4.3.10.8. Sketch	131
Gambar 4.3.10.9. Extrude	131
Gambar 4.3.10.10. Sketch	132
Gambar 4.3.10.11. Extrude	132
Gambar 4.3.10.12. Round	132
Gambar 4.3.10.13. Chamfer 1 mm	133
Gambar 4.3.10.14. Chamfer 0,5 mm	133
Gambar 4.3.10.15. Sketch	133
Gambar 4.3.10.16. Extrude on both sides	134
Gambar 4.3.10.17. Pattern direction	134
Gambar 4.3.10.18. Sketch	135
Gambar 4.3.10.19. Extrude to selected point	135
Gambar 4.3.11. Spindle shaft	135
Gambar 4.3.11.1. Sketch	136
Gambar 4.3.11.2. Revolve	136
Gambar 4.3.11.3. Sketch	136
Gambar 4.3.11.4. Extrude up to next surface	137
Gambar 4.3.11.5. Pattern axis	137
Gambar 4.3.11.6. Round	138
Gambar 4.3.11.7. New plane	138
Gambar 4.3.11.8. Sketch	138
Gambar 4.3.11.9. Trajectory	139
Gambar 4.3.11.10. Sketch	139
Gambar 4.3.11.11. Sweep	139
Gambar 4.3.11.12. Chamfer	140
Gambar 4.3.12. Stop collar	140
Gambar 4.3.12.1. Sketch	140
Gambar 4.3.12.2. Extrude	141
Gambar 4.3.12.3. Sketch	141
Gambar 4.3.12.4. Extrude	141

Gambar 4.3.12.5. Sketch	142
Gambar 4.3.12.6. Extrude to intersect with all surface	142
Gambar 4.3.12.7. Sketch	142
Gambar 4.3.12.8. Extrude	143
Gambar 4.3.13. Stop rod	143
Gambar 4.3.13.1. Sketch	143
Gambar 4.3.13.2. Revolve	144
Gambar 4.3.13.3. Sketch	144
Gambar 4.3.13.4. Sketch	144
Gambar 4.3.13.5. Helical sweep	145
Gambar 4.3.13.6. Sketch	145
Gambar 4.3.13.7. Sketch	145
Gambar 4.3.13.8. Helical sweep	146
Gambar 4.3.13.9. Chamfer	146
Gambar 4.3.14. Pulley insert	146
Gambar 4.3.14.1. Sketch	147
Gambar 4.3.14.2. Revolve	147
Gambar 4.3.14.3. Sketch	147
Gambar 4.3.14.4. Extrude to intersect with all surface	148
Gambar 4.3.14.5. Sketch	148
Gambar 4.3.14.6. Extrude on both sides	148
Gambar 4.3.14.7. New plane	149
Gambar 4.3.14.8. Sketch	149
Gambar 4.3.14.9. Extrude	149
Gambar 4.3.14.10. Pattern axis	150
Gambar 4.3.14.11. Chamfer	150
Gambar 4.3.15. Quill spring cap	151
Gambar 4.3.15.1. Sketch	151
Gambar 4.3.15.2. Revolve	152
Gambar 4.3.15.3. Sketch	152
Gambar 4.3.15.4. Extrude on both sides	152

Gambar 4.3.15.5. <i>Pattern axis</i>	153
Gambar 4.3.15.6. <i>New plane</i>	153
Gambar 4.3.15.7. <i>Sketch</i>	153
Gambar 4.3.15.8. <i>Extrude</i>	154
Gambar 4.3.15.9. <i>Sketch</i>	154
Gambar 4.3.15.10. <i>Extrude to intersect with all surface</i>	154
Gambar 4.3.16. <i>Switch box</i>	155
Gambar 4.3.16.1. <i>Sketch</i>	155
Gambar 4.3.16.2. <i>Extrude</i>	155
Gambar 4.3.16.3. <i>Trajectory</i>	156
Gambar 4.3.16.4. <i>Sketrch</i>	156
Gambar 4.3.16.5. <i>Sweep</i>	156
Gambar 4.3.16.6. <i>Sketch</i>	157
Gambar 4.3.16.7. <i>Extrude to intersect with all serface</i>	157
Gambar 4.3.17. <i>Pulley cover bawah</i>	157
Gambar 4.3.17.1. <i>Sketch</i>	158
Gambar 4.3.17.2. <i>Extrude</i>	158
Gambar 4.3.17.3. <i>Trajectory</i>	159
Gambar 4.3.17.4. <i>Sketch</i>	159
Gambar 4.3.17.5. <i>Sweep</i>	159
Gambar 4.3.17.6. <i>Trajectory</i>	160
Gambar 4.3.17.7. <i>Sketch</i>	160
Gambar 4.3.17.8. <i>Sweep</i>	160
Gambar 4.3.17.9. <i>Trajectory</i>	161
Gambar 4.3.17.10. <i>Sketch</i>	161
Gambar 4.3.17.11. <i>Sweep</i>	161
Gambar 4.3.17.12. <i>Trajectory</i>	162
Gambar 4.3.17.13. <i>Sketch</i>	162
Gambar 4.3.17.14. <i>Sweep</i>	162
Gambar 4.3.17.15. <i>Sketch</i>	163
Gambar 4.3.17.16. <i>Extrude</i>	163

Gambar 4.3.17.17. Sketch	163
Gambar 4.3.17.18. Extrude to intersect with all surface	164
Gambar 4.3.17.19. Sketch	164
Gambar 4.3.17.20. Extrude to intersect with all surface	164
Gambar 4.3.17.21. Round	165
Gambar 4.3.18. Pulley cover atas	165
Gambar 4.3.18.1. Sketch	165
Gambar 4.3.18.2. Extrude	166
Gambar 4.3.18.3. Trajectory	166
Gambar 4.3.18.4. Sketch	166
Gambar 4.3.18.5. Sweep	167
Gambar 4.3.18.6. Trajectory	167
Gambar 4.3.18.7. Sketch	167
Gambar 4.3.18.8. Sweep	168
Gambar 4.3.18.9. Sketch	168
Gambar 4.3.18.10. Extrude	168
Gambar 4.3.18.11. Sketch	169
Gambar 4.3.18.12. Extrude	169
Gambar 4.3.18.13. Round	169
Gambar 4.3.19. Spindle pulley	170
Gambar 4.3.19.1. Sketch	170
Gambar 4.3.19.2. Revolve	171
Gambar 4.3.19.3. Chamfer	171
Gambar 4.3.19.4. Sketch	172
Gambar 4.3.19.5. Extrude to intersect with all surface	172
Gambar 4.3.19.6. Sketch	172
Gambar 4.3.19.7. Sketch	173
Gambar 4.3.19.8. Helical sweep	173
Gambar 4.3.20. Motor frame	173
Gambar 4.3.20.1. Sketch	174
Gambar 4.3.20.2. Extrude	174

Gambar 4.3.20.3. Sketch	175
Gambar 4.3.20.4. Extrude to intersect with all surface	175
Gambar 4.3.20.5. Pattern axis	175
Gambar 4.3.20.6. Mirror	176
Gambar 4.3.20.7. New plane	176
Gambar 4.3.20.8. Sketch	176
Gambar 4.3.20.9. Extrude	177
Gambar 4.3.20.10. Sketch	177
Gambar 4.3.20.11. Extrude	177
Gambar 4.3.20.12. Pattern direction	178
Gambar 4.3.20.13. Round	178
Gambar 4.3.21. Motor cover	179
Gambar 4.3.21.1. Sketch	179
Gambar 4.3.21.2. Revolve	180
Gambar 4.3.21.3. Sketch	180
Gambar 4.3.21.4. Extrude	180
Gambar 4.3.21.5. Pattern axis	181
Gambar 4.3.21.6. Sketch	181
Gambar 4.3.21.7. Extrude	181
Gambar 4.3.21.8. Sketch	182
Gambar 4.3.21.9. Extrude up to next surface	182
Gambar 4.3.21.10. Sketch	182
Gambar 4.3.21.11. Extrude to intersect with all surface	183
Gambar 4.3.21.12. New group	183
Gambar 4.3.21.13. Pattern axis	183
Gambar 4.3.21.14. Chamfer	184
Gambar 4.3.22. Rotor	184
Gambar 4.3.22.1. Sketch	184
Gambar 4.3.22.2. Revolve	185
Gambar 4.3.22.3. Chamfer	185
Gambar 4.3.22.4. Sketch	185

Gambar 4.3.22.5. Sketch	186
Gambar 4.3.22.6. Pattern axis	186
Gambar 4.3.22.7. Sketch	187
Gambar 4.3.22.8. Extrude	187
Gambar 4.3.23. Motor pulley	187
Gambar 4.3.23.1. Sketch	188
Gambar 4.3.23.2. Revolve	188
Gambar 4.3.23.3. Chamfer	189
Gambar 4.3.23.4. Sketch	189
Gambar 4.3.23.5. Extrude to intersect with all surface	189
Gambar 4.3.23.6. Sketch	190
Gambar 4.3.23.7. Sketch	190
Gambar 4.3.23.8. Sketch	190
Gambar 4.3.24. Pulley	191
Gambar 4.3.24.1. Sketch	191
Gambar 4.3.24.2. Trajectory	191
Gambar 4.3.24.3. Sketch	192
Gambar 4.3.24.4. Sweep	192
Gambar 4.3.25. Motor stop	192
Gambar 4.3.25.1. Sketch	193
Gambar 4.3.25.2. Revolve	193
Gambar 4.3.25.3. Chamfer	193
Gambar 4.3.26. Belt tension lock screw	194
Gambar 4.3.26.1. Sketch	194
Gambar 4.3.26.2. Extrude	195
Gambar 4.3.26.3. Sketch	195
Gambar 4.3.26.4. Extrude	195
Gambar 4.3.26.5. Chamfer	196
Gambar 4.3.26.6. Sketch	196
Gambar 4.3.26.7. Sketch	196
Gambar 4.3.26.8. Helical sweep	197

Gambar 4.3.26.9. Round	197
Gambar 4.4.1.1. Base placement	198
Gambar 4.4.1.2. Column support base placement	198
Gambar 4.4.1.3. Column support placement	199
Gambar 4.4.1.4. Bolt M8 placement	199
Gambar 4.4.1.5. Pattern bolt m8	200
Gambar 4.4.2.1. Table support placement	200
Gambar 4.4.2.2. Table placement	201
Gambar 4.4.2.3. Bolt placement	201
Gambar 4.4.2.4. Table lock handle placement	201
Gambar 4.4.2.5. Pin placement	202
Gambar 4.4.2.6. Washer placement	202
Gambar 4.4.2.7. Bolt M12 placement	202
Gambar 4.4.3.1. Motor cover placement	203
Gambar 4.4.3.2. Ball bearing motor placement	203
Gambar 4.4.3.3. Rotor placement	204
Gambar 4.4.3.4. Ball bearing motor placement	204
Gambar 4.4.3.5. Motor frame placemen	204
Gambar 4.4.3.6. Motor cover placement	205
Gambar 4.4.3.7. Bolt M4 motor placement	205
Gambar 4.4.3.8. Pattern bolt m4 motor	206
Gambar 4.4.3.9. Nut M4 motor placement	206
Gambar 4.4.3.10. Pattern nut m4 motor	206
Gambar 4.4.4.1. Head placement	207
Gambar 4.4.4.2. Pinion shaft plavement	207
Gambar 4.4.4.3. Feed handle placement	208
Gambar 4.4.4.4. Pattern feed handle	208
Gambar 4.4.4.5. Knob placement	209
Gambar 4.4.4.6. Pattern knob	209
Gambar 4.4.4.7. Quill gasket placement	209
Gambar 4.4.4.8. Quill shaft placement	210

Gambar 4.4.4.9. Ball bearing placement	210
Gambar 4.4.4.10. Spindle shaft placement	211
Gambar 4.4.4.11. Stop collar placement	211
Gambar 4.4.4.12. Nut M5 placement	211
Gambar 4.4.4.13. Bolt M5 placement	212
Gambar 4.4.4.14. Washer id6 placement	212
Gambar 4.4.4.15. Stop rod placement	213
Gambar 4.4.4.16. Nut M5 placement	213
Gambar 4.4.4.17. Nut M8 placement	213
Gambar 4.4.4.18. Ball bearing OD40 placement	214
Gambar 4.4.4.19. Ball bearing OD40 placement	214
Gambar 4.4.4.20. Pulley insert placement	215
Gambar 4.4.4.21. Pin head placement	215
Gambar 4.4.4.22. Nut M8 placement	215
Gambar 4.4.4.23. Fit set crewM8 placement	216
Gambar 4.4.4.24. Spring retainer placement	216
Gambar 4.4.4.25. Quill spring cap placement	217
Gambar 4.4.4.26. Nut M10 placement	217
Gambar 4.4.4.27. Switch box placement	218
Gambar 4.4.4.28. Switch placement	219
Gambar 4.4.4.29. Rubber bushing placement	219
Gambar 4.4.4.30. Pattern rubbing bushing	220
Gambar 4.4.4.31. Pattern rubbing bushing	220
Gambar 4.4.4.32. Lower pulley cover placement	221
Gambar 4.4.4.33. Upper pulley cover placement	221
Gambar 4.4.4.34. Screw M6 placement	222
Gambar 4.4.4.35. Pattern screw M6	222
Gambar 4.4.4.36. Pattern screw M6	222
Gambar 4.4.4.37. Spindle pulley placement	223
Gambar 4.4.4.38. Screw M3 placement	223

Gambar 4.4.5.1. Assembling base placement	224
Gambar 4.4.5.2. Assembling table placement	225
Gambar 4.4.5.3. Assembling head placement	225
Gambar 4.4.5.4. Assembling motor placement	226
Gambar 4.4.5.5. Screw set placement	227
Gambar 4.4.5.6. Screw set placement	227
Gambar 4.4.5.7. Stop motor placement	228
Gambar 4.4.5.8. Spring placement	229
Gambar 4.4.5.9. Belt tension lock screw placement	229
Gambar 4.4.5.10. Bolt M8 placement	230
Gambar 4.4.5.11. Motor pulley placement	231
Gambar 4.4.5.12. Belt placement	232
Gambar 4.4.5.13. Assembling total bench drill	232

DAFTAR TABEL

Tabel 3.1 <i>Skecth feature</i>	16
Tabel 3.2 <i>Extrude feature</i>	18
Tabel 3.3 <i>Revolve feature</i>	19
Tabel 3.4 <i>Pattern feature</i>	24
Tabel 3. 5 <i>Assembly constraint feature</i>	27
Tabel 3.6 <i>Miscellaneous Feature</i>	28
Tabel 3.7 <i>Cross Section feature</i>	32