

Der Falkenberg Schliff

Vierzehn GemCad Diagramme für einen neuen Edelsteinschliff



Der Falkenberg Schliff – wie er entstand

Die Begeisterung des Facettierens von Edelsteinen hat mein Bruder Hansruedi geweckt, anlässlich eines Besuches bei seiner Familie in Texas vor etlichen Jahren. Er zeigte mir einige selbst geschliffene Juwelen und lehrte mich darauf das Schleifen und Polieren mit allem Drum und Dran auf seiner Facetron.

Die sehr warmen texanischen Nächte erschwerten das Einschlafen, so dass umso mehr Zeit für das Facettieren übrigblieb. Es entstanden Steine vor allem in einfachen Cuts wie etwa Easy Eight und SRB.

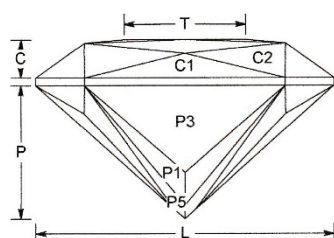
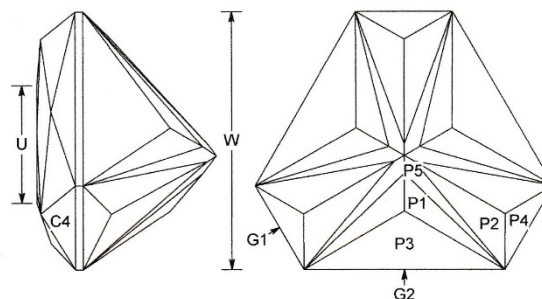
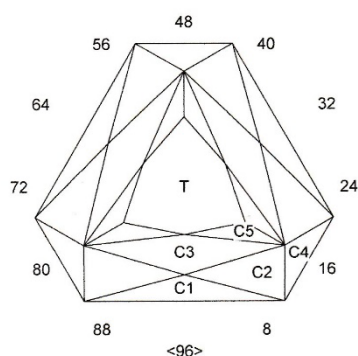
Zurück in der Schweiz habe ich mir bald darauf eine eigene Facetron mit Zubehör geordert. Die erste Schleifwerkstatt war somit im Keller unseres Neftenbacher Hauses. Vielerlei Schliffe wurden ausprobiert, darunter auch der Flanders Cut. Ich war davon fasziniert, weil er für mich wie die Quadratur des Kreises wirkt. Es gelang mir mit GemCad, ein Schliffdiagramm des Flanders nachzuzeichnen. Ich fing an das Design zu variieren, Facetten wegzulassen oder hinzuzufügen, den vierfachsymmetrischen Schliff mit dreifacher und fünffacher Symmetrie zu berechnen.

Der herkömmliche Flanders Cut hat für Unter- und Oberseite keine ebene Rondistenlinie. Indem ich in den 4 Ecken des Unterteiles noch je eine zusätzliche Facette einfügte, gelang mir aus meiner Sicht eine Verbesserung vor allem aus Sicht des Fassens.

Die Unterseite hat nun immer denselben Aufbau, ob mit 3- 4- 5- oder gar 6-facher Symmetrie. Mit der vorgegebenen Unterseite (auch Pavilion genannt) lassen sich nun z.B. ein Brillantschliff, ein Smaragdschliff oder auch ein Princess Cut ausführen.

Den Namen Falkenberg für das Design wählte ich wegen der relativen Nähe der sehr schönen schwedischen Küstenstadt zu meinem derzeitigen Atelier in Südschweden.

Martin Steiner, März 2022



Falkenberg 96-3 Princess

by Martin Steiner, 18.04.2021

Angles for R.I. = 1.540

46 + 6 girdles = 52 facets

3-fold, mirror-image symmetry

96 index

$L/W = 1.155$ $T/W = 0.472$ $U/W = 0.456$

$P/W = 0.517$ $C/W = 0.149$

$Vol./W^3 = 0.263$

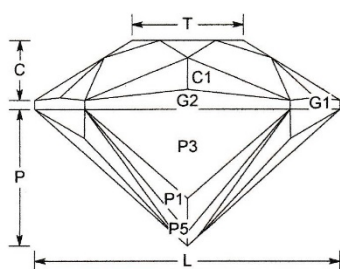
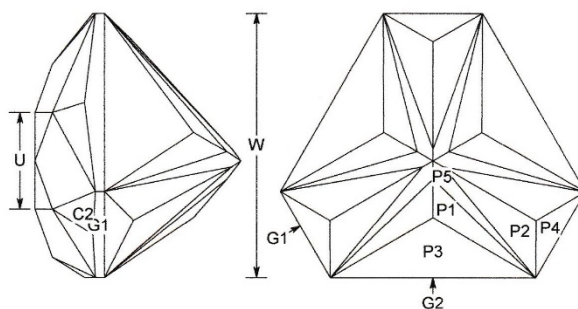
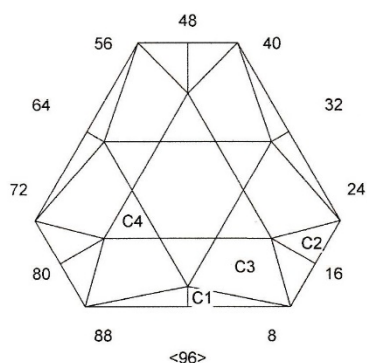
PAVILION

P1	43.20°	06-26-38-58-70-90	cut to centerpoint
P2	42.60°	15-17-47-49-79-81	cut to same centerpoint
G1	90.00°	16-48-80	establish size
G2	90.00°	96-32-64	establish size
P3	56.00°	96-32-64	level girdle
P4	45.66°	16-48-80	level girdle
P5	41.84°	08-24-40-56-72-88	meet girdle, cut new centerpoint

CROWN

C1	43.00°	96-32-64	cut to level girdle, determine girdle thickness
C2	32.00°	02-30-34-62-66-94	cut to meet girdle
C3	19.00°	96-32-64	cut to meet apex C1
C4	51.25°	16-48-80	cut to level girdle, meet C1, C2
C5	7.00°	03-29-35-61-67-93	cut to meet apex C4
T	0.00°	Table	cut to meet apex C3

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Falkenberg 96-3 Trilliant

by Martin Steiner, 26.07.2013

Angles for R.I. = 1.540

49 + 6 girdles = 55 facets

3-fold, mirror-image symmetry

96 index

$L/W = 1.155$ $T/W = 0.422$ $U/W = 0.366$

$P/W = 0.517$ $C/W = 0.228$

$Vol./W^3 = 0.301$

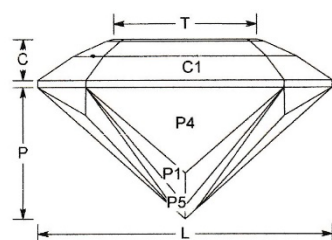
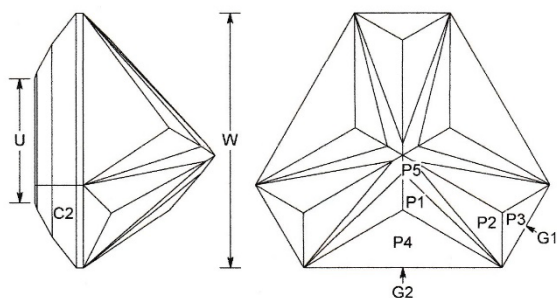
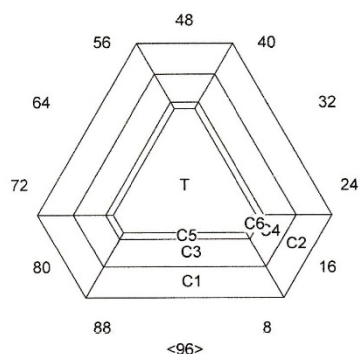
PAVILION

P1	43.20°	06-26-38-58-70-90	cut to centerpoint
P2	42.60°	15-17-47-49-79-81	cut to same centerpoint
G1	90.00°	16-48-80	establish size
G2	90.00°	96-32-64	establish size
P3	56.00°	96-32-64	level girdle
P4	45.66°	16-48-80	level girdle
P5	41.84°	08-24-40-56-72-88	meet girdle, cut new centerpoint

CROWN

C1	58.04°	01-31-33-63-65-95	uneven girdle line, cut simultaneously with C2
C2	38.50°	15-17-47-49-79-81	uneven girdle line, cut simultaneously with C1
C3	31.91°	08-24-40-56-72-88	meet girdle line
C4	19.80°	96-16-32-48-64-80	GemCad 6-fold symmetry
	0.00°	Table	

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Falkenberg 96-3 Trimerald

by Martin Steiner, 26.07.2013

Angles for R.I. = 1.540

43 + 6 girdles = 49 facets

3-fold, mirror-image symmetry

96 index

$L/W = 1.155$ $T/W = 0.561$ $U/W = 0.486$

$P/W = 0.517$ $C/W = 0.162$

$Vol./W^3 = 0.262$

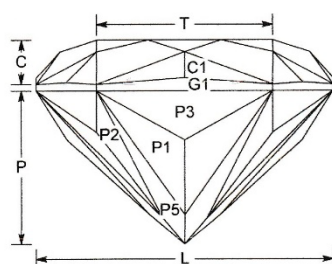
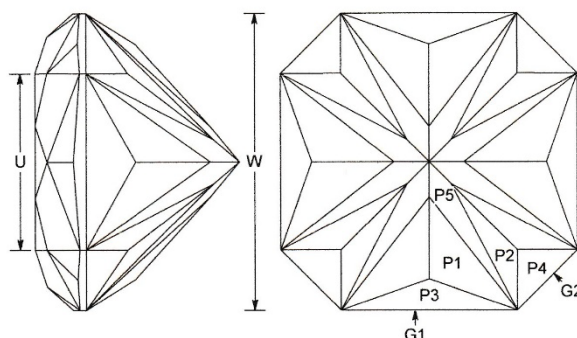
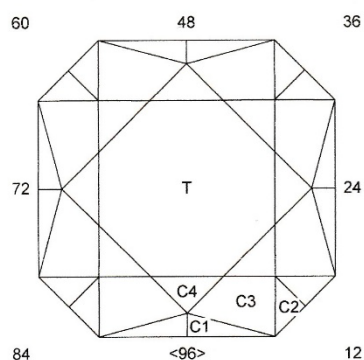
PAVILION

P1	43.20°	06-26-38-58-70-90	cut to centerpoint
P2	42.60°	15-17-47-49-79-81	cut to same centerpoint
G1	90.00°	16-48-80	establish size
G2	90.00°	96-32-64	establish size
P3	45.66°	16-48-80	level girdle
P4	56.00°	96-32-64	level girdle
P5	41.84°	08-24-40-56-72-88	meet girdle, cut new centerpoint

CROWN

C1	38.00°	96-32-64	determine girdle thickness
C2	38.00°	16-48-80	determine girdle thickness
C3	28.00°	96-32-64	
C4	28.00°	16-48-80	
C5	18.00°	96-32-64	
C6	18.00°	16-48-80	
T	0.00°	Table	

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Falkenberg 96-4 cut corner Square Brilliant

by Martin Steiner, 05.07.2012

Angles for R.I. = 1.540

65 + 8 girdles = 73 facets

4-fold, mirror-image symmetry

96 index

$L/W = 1.000$ $T/W = 0.594$ $U/W = 0.594$

$P/W = 0.516$ $C/W = 0.150$

$Vol./W^3 = 0.288$

PAVILION

P1	43.20°	04-20-28-44- 52-68-76-92	cut to centerpoint
P2	42.60°	11-13-35-37- 59-61-83-85	cut to same centerpoint
G1	90.00°	96-24-48-72	establish size
G2	90.00°	12-36-60-84	establish size
P3	58.00°	96-24-48-72	level girdle
P4	44.36°	12-36-60-84	level girdle, these 4 facets are additional to the traditional flanders cut
P5	41.90°	06-18-30-42- 54-66-78-90	meet girdle, new centerpoint

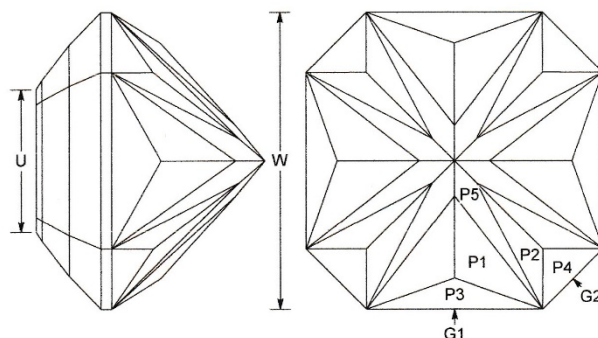
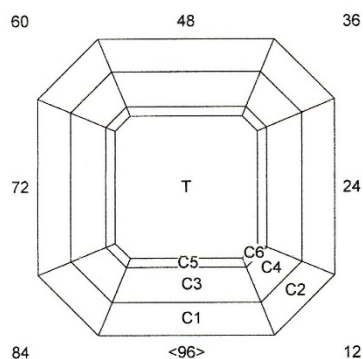
CROWN

C1	48.26°	01-23-25-47- 49-71-73-95	uneven girdle line, cut simultaneously with C2
C2	36.00°	11-13-35-37- 59-61-83-85	uneven girdle line, cut simultaneously with C1
C3	30.55°	06-18-30-42- 54-66-78-90	meet girdle line
C4	17.80°	96-12-24-36- 48-60-72-84	Gemcad 8-fold symmetry
T	0.00°	Table	

The design of this stone is based on the FLANDERS cut.

To achieve an even girdle line pavilionsides i have placed four more facets into the corners of the stone.

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Falkenberg 96-4 Square Emerald

by Martin Steiner, 26.03.2013

Angles for R.I. = 1.540

57 + 8 girdles = 65 facets

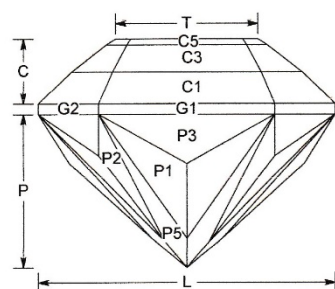
4-fold, mirror-image symmetry

96 index

$L/W = 1.000$ $T/W = 0.481$ $U/W = 0.481$

$P/W = 0.516$ $C/W = 0.218$

$Vol./W^3 = 0.327$



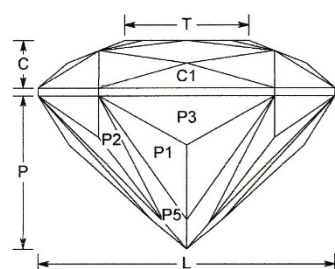
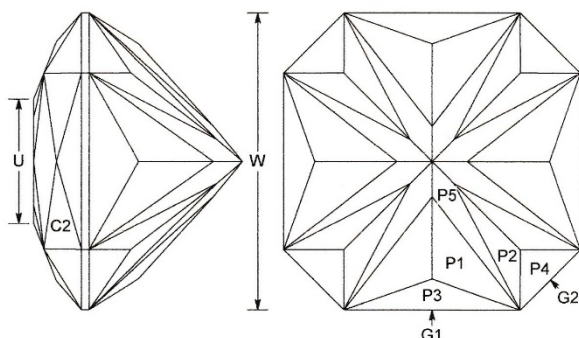
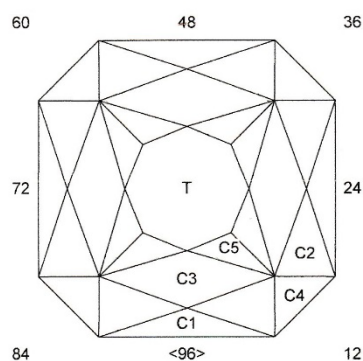
PAVILION

P1	43.20°	04-20-28-44- 52-68-76-92	cut to centerpoint
P2	42.60°	11-13-35-37- 59-61-83-85	cut to same centerpoint
G1	90.00°	96-24-48-72	establish size
G2	90.00°	12-36-60-84	establish size
P3	58.00°	96-24-48-72	level girdle
P4	44.36°	12-36-60-84	level girdle
P5	41.90°	06-18-30-42- 54-66-78-90	meet girdle, new centerpoint

CROWN

C1	44.00°	96-24-48-72	determine girdle thickness
C2	44.00°	12-36-60-84	determine girdle thickness
C3	38.00°	96-24-48-72	
C4	38.00°	12-36-60-84	
C5	32.00°	96-24-48-72	
C6	32.00°	12-36-60-84	
T	0.00°	Table	

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Falkenberg 96-4h Princess

by Martin Steiner, 16.04.2021

Angles for R.I. = 1.540

61 + 8 girdles = 69 facets

4-fold, mirror-image symmetry

96 index

L/W = 1.000 T/W = 0.419 U/W = 0.419

P/W = 0.516 C/W = 0.160

Vol./W³ = 0.287

PAVILION

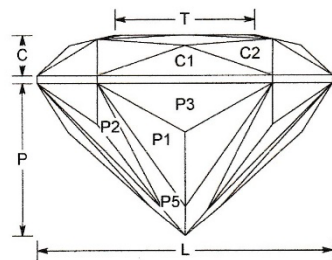
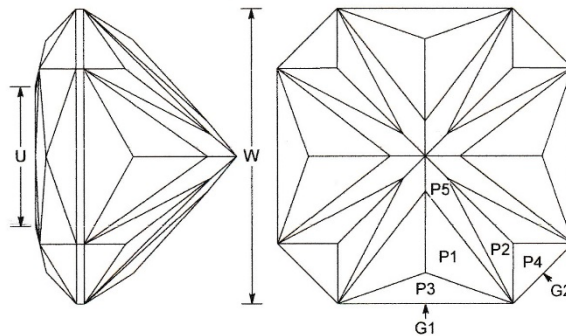
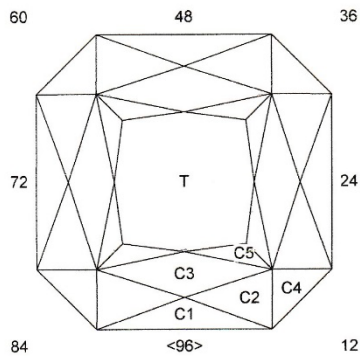
P1	43.20°	04-20-28-44- 52-68-76-92	cut to centerpoint
P2	42.60°	11-13-35-37- 59-61-83-85	cut to same centerpoint
G1	90.00°	96-24-48-72	establish size
G2	90.00°	12-36-60-84	establish size
P3	58.00°	96-24-48-72	level girdle
P4	44.36°	12-36-60-84	level girdle
P5	41.90°	06-18-30-42- 54-66-78-90	meet girdle, new centerpoint

CROWN

C1	41.00°	96-24-48-72	establish girdle thickness
C2	32.00°	02-22-26-46- 50-70-74-94	meet girdle line
C3	21.50°	96-24-48-72	meet apex C1
C4	41.11°	12-36-60-84	meet girdle, C2, C3
C5	10.00°	06-18-30-42- 54-66-78-90	meet apex C4
T	0.00°	Table	meet apex C3

high table

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Falkenberg 96-41 Princess

by Martin Steiner, 16.04.2021

Angles for R.I. = 1.540

61 + 8 girdles = 69 facets

4-fold, mirror-image symmetry

96 index

$L/W = 1.000$ $T/W = 0.474$ $U/W = 0.474$

$P/W = 0.516$ $C/W = 0.138$

$Vol./W^3 = 0.283$

PAVILION

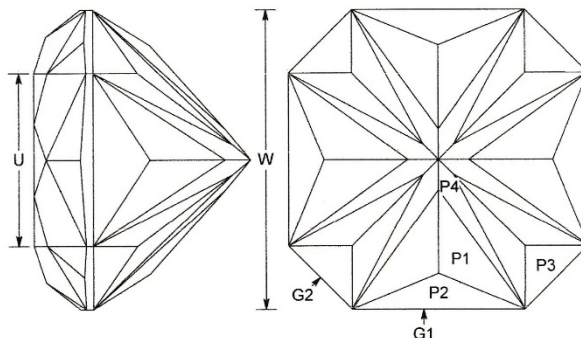
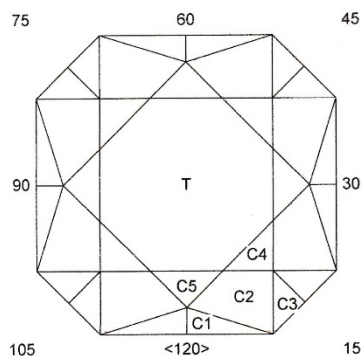
P1	43.20°	04-20-28-44- 52-68-76-92	cut to centerpoint
P2	42.60°	11-13-35-37- 59-61-83-85	cut to same centerpoint
G1	90.00°	96-24-48-72	establish size
G2	90.00°	12-36-60-84	establish size
P3	58.00°	96-24-48-72	level girdle
P4	44.36°	12-36-60-84	level girdle
P5	41.90°	06-18-30-42- 54-66-78-90	meet girdle, new centerpoint

CROWN

C1	43.50°	96-24-48-72	establish girdle thickness
C2	32.00°	03-21-27-45- 51-69-75-93	meet girdle line
C3	12.92°	96-24-48-72	meet apex C1
C4	41.00°	12-36-60-84	level girdle
C5	8.00°	02-22-26-46- 50-70-74-94	meet apex C4
T	0.00°	Table	meet apex C3

low table

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Falkenberg 120-4 cut corner Square Brilliant

by Martin Steiner, 06.12.2015

Angles for R.I. = 1.540

65 + 8 girdles = 73 facets

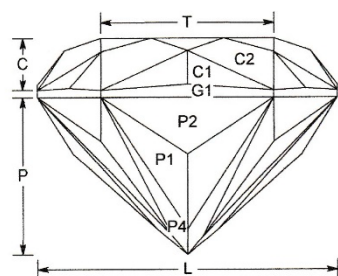
4-fold, mirror-image symmetry

120 index

L/W = 1.000 T/W = 0.579 U/W = 0.579

P/W = 0.525 C/W = 0.175

Vol./W³ = 0.305



PAVILION

P1	43.26°	006-014-016- cut to centerpoint 024-036-044- 046-054-066- 074-076-084- 096-104-106- 114
G1	90.00°	120-030-060- establish size 090
G2	90.00°	015-045-075- establish size 105
P2	58.05°	120-030-060- level girdle 090
P3	44.69°	015-045-075- level girdle 105
P4	42.46°	008-022-038- meet girdle, new 052-068-082- centerpoint 098-112

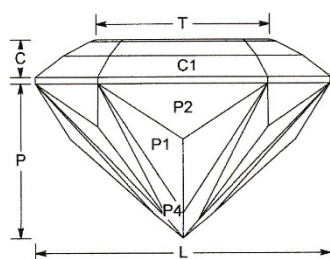
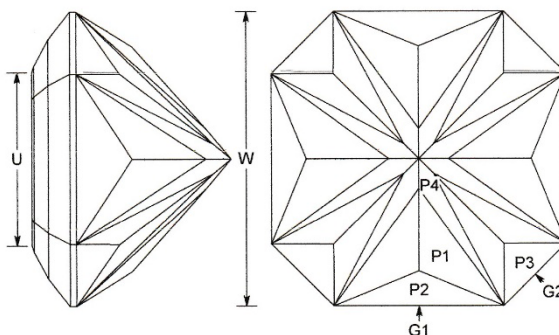
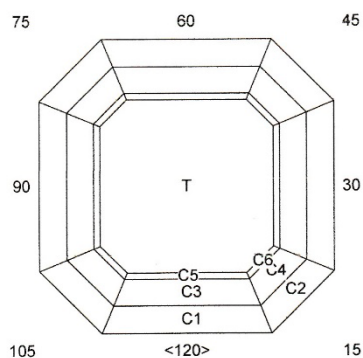
CROWN

C1	52.00°	001-029-031- uneven girdle line, cut 059-061-089- simultaneously with C2 091-119
C2	33.83°	008-022-038- uneven girdle line, cut 052-068-082- simultaneously with C1 098-112
C3	39.50°	014-016-044- meet girdle, C1 046-074-076- 104-106
C4	21.03°	015-045-075- meet apex C3 105
C5	18.89°	120-030-060- meet apex C1 090
T	0.00°	Table meet apex C2

The design of the stone is based on the FLANDERS cut.

To achieve an even girdle line pavilionsides i have placed four more facets into the corners of the stone.

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Falkenberg 120-4 Square Emerald

by Martin Steiner, 06.12.2015

Angles for R.I. = 1.540

57 + 8 girdles = 65 facets

4-fold, mirror-image symmetry

120 index

$L/W = 1.000$ $T/W = 0.589$ $U/W = 0.589$

$P/W = 0.525$ $C/W = 0.128$

$Vol./W^3 = 0.275$

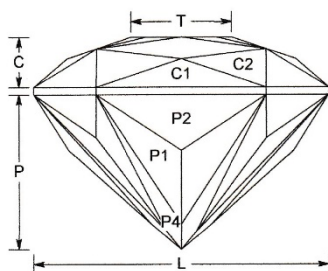
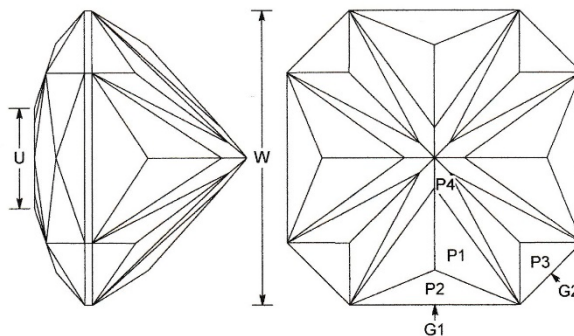
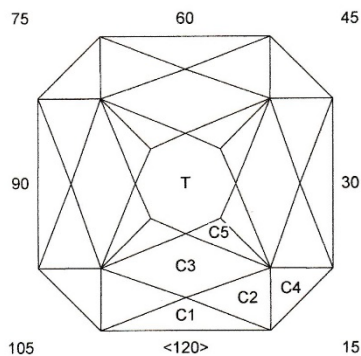
PAVILION

P1	43.26°	006-014-016- cut to centerpoint
		024-036-044-
		046-054-066-
		074-076-084-
		096-104-106-
		114
G1	90.00°	120-030-060- establish size
		090
G2	90.00°	015-045-075- establish size
		105
P2	58.05°	120-030-060- level girdle
		090
P3	44.69°	015-045-075- level girdle
		105
P4	42.46°	008-022-038- meet girdle, new
		052-068-082- centerpoint
		098-112

CROWN

C1	38.00°	120-030-060- set girdle thickness
		090
C2	38.00°	015-045-075- set girdle thickness
		105
C3	28.00°	120-030-060-
		090
C4	28.00°	015-045-075-
		105
C5	18.00°	120-030-060-
		090
C6	18.00°	015-045-075-
		105
T	0.00°	Table

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Falkenberg 120-4h Princess

by Martin Steiner, 25.10.2020

Angles for R.I. = 1.540

61 + 8 girdles = 69 facets

4-fold, mirror-image symmetry

120 index

$L/W = 1.000$ $T/W = 0.340$ $U/W = 0.340$

$P/W = 0.525$ $C/W = 0.171$

$Vol./W^3 = 0.289$

PAVILION

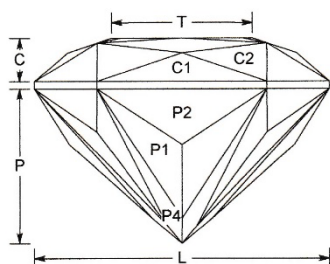
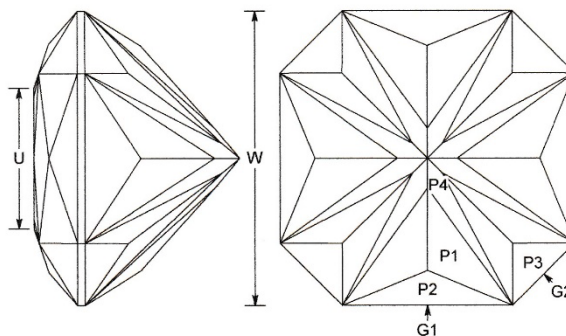
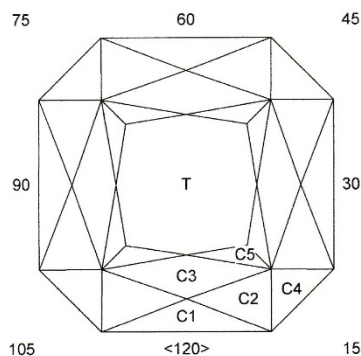
P1	43.26°	006-014-016- cut to centerpoint 024-036-044- 046-054-066- 074-076-084- 096-104-106- 114
G1	90.00°	120-030-060- establish size 090
G2	90.00°	015-045-075- establish size 105
P2	58.05°	120-030-060- level girdle 090
P3	44.69°	015-045-075- level girdle 105
P4	42.46°	008-022-038- meet girdle, new 052-068-082- centerpoint 098-112

CROWN

C1	41.00°	120-030-060- set girdle thickness 090
C2	32.00°	003-027-033- meet girdle line 057-063-087- 093-117
C3	18.60°	120-030-060- meet apex C1 090
C4	41.02°	015-045-075- level girdle 105
C5	10.00°	008-022-038- meet apex C4 052-068-082- 098-112
T	0.00°	Table meet apex C3

high table

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Falkenberg 120-4I Princess

by Martin Steiner, 25.10.2020

Angles for R.I. = 1.540

61 + 8 girdles = 69 facets

4-fold, mirror-image symmetry

120 index

$L/W = 1.000$ $T/W = 0.478$ $U/W = 0.478$

$P/W = 0.525$ $C/W = 0.147$

$Vol./W^3 = 0.285$

PAVILION

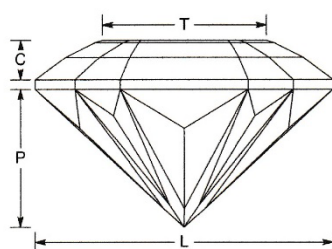
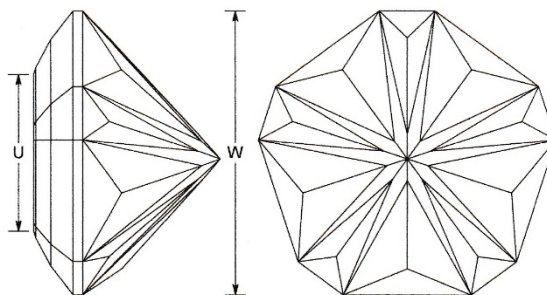
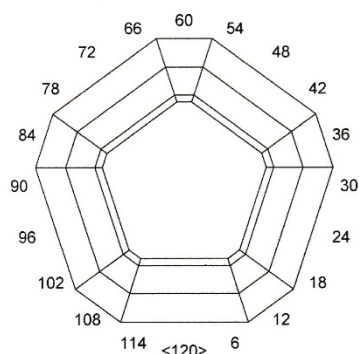
P1	43.26°	006-014-016- cut to centerpoint
		024-036-044-
		046-054-066-
		074-076-084-
		096-104-106-
		114
G1	90.00°	120-030-060- establish size
		090
G2	90.00°	015-045-075- establish size
		105
P2	58.05°	120-030-060- level girdle
		090
P3	44.69°	015-045-075- level girdle
		105
P4	42.46°	008-022-038- meet girdle, new
		052-068-082- centerpoint
		098-112

CROWN

C1	41.00°	120-030-060- set girdle thickness
		090
C2	32.00°	003-027-033- meet girdle line
		057-063-087-
		093-117
C3	18.60°	120-030-060- meet apex C1
		090
C4	41.02°	015-045-075- level girdle
		105
C5	10.00°	003-027-033- meet apex C4
		057-063-087-
		093-117
T	0.00°	Table meet apex C3

low table

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Falkenberg 120-5 Pentemerald

by Martin Steiner, 18.04.2021

Angles for R.I. = 1.540

71 + 10 girdles = 81 facets

5-fold, mirror-image symmetry

120 index

$L/W = 1.051$ $T/W = 0.580$ $U/W = 0.552$

$P/W = 0.486$ $C/W = 0.139$

$Vol./W^3 = 0.239$

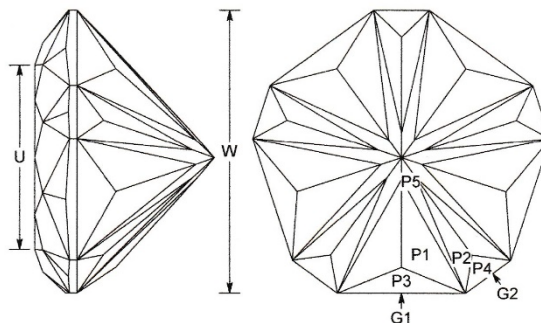
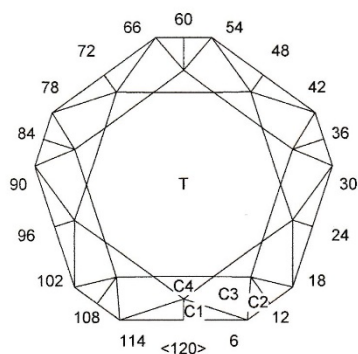
PAVILION

43.20°	005-019-029-
	043-053-067-
	077-091-101-115
43.00°	011-013-035-
	037-059-061-
	083-085-107-109
90.00°	012-036-060-
	084-108
90.00°	120-024-048-
	072-096
44.48°	012-036-060-
	084-108
56.46°	120-024-048-
	072-096
42.60°	007-017-031-
	041-055-065-
	079-089-103-113

CROWN

38.00°	120-024-048-
	072-096
38.00°	012-036-060-
	084-108
28.00°	120-024-048-
	072-096
28.00°	012-036-060-
	084-108
18.00°	120-024-048-
	072-096
18.00°	012-036-060-
	084-108
0.00°	Table

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Falkenberg 120-5 Pentilliant

by Martin Steiner, 20.04.2021

Angles for R.I. = 1.540

81 + 10 girdles = 91 facets

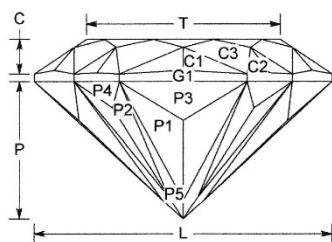
5-fold, mirror-image symmetry

120 index

L/W = 1.051 T/W = 0.686 U/W = 0.652

P/W = 0.486 C/W = 0.123

Vol./W³ = 0.233



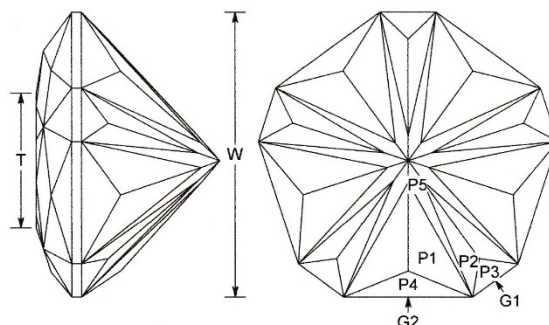
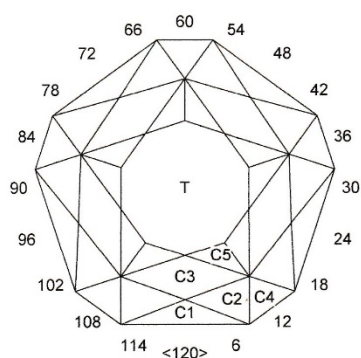
PAVILION

P1	43.20°	005-019-029-043-053-067-077-091-101-115	cut to centerpoint
P2	43.00°	011-013-035-037-059-061-083-085-107-109	cut to same centerpoint
G1	90.00°	120-024-048-072-096	set size
G2	90.00°	012-036-060-084-108	set size
P3	56.46°	120-024-048-072-096	level girdle
P4	44.48°	012-036-060-084-108	level girdle
P5	42.60°	007-017-031-041-055-065-079-089-103-113	meet girdle, new centerpoint

CROWN

C1	47.66°	001-023-025-047-049-071-073-095-097-119	uneven girdle line, cut simultaneously with C2
C2	38.00°	011-013-035-037-059-061-083-085-107-109	uneven girdle line, cut simultaneously with C1
C3	33.85°	006-018-030-042-054-066-078-090-102-114	meet girdle
C4	19.80°	120-012-024-036-048-060-072-084-096-108	meet apex C1, apex C2 GemCad 10-fold symmetry
T	0.00°	Table	

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Falkenberg 120-5 Princess

by Martin Steiner. 20.04.2021

Angles for R.I. = 1.540

76 + 10 girdles = 86 facets

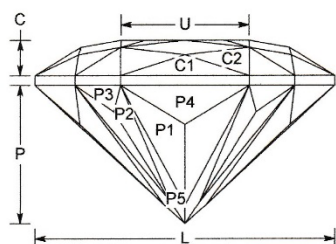
5-fold, mirror-image symmetry

120 index

L/W = 1.051 T/W = 0.473 U/W = 0.450

P/W = 0.486 C/W = 0.125

Vol./W³ = 0.232



PAVILION

P1	43.20°	005-019-029-043-053-067-077-091-101-115	cut to centerpoint
P2	43.00°	011-013-035-037-059-061-083-085-107-109	cut to same centerpoint
G1	90.00°	012-036-060-084-108	establish size
G2	90.00°	120-024-048-072-096	establish size
P3	44.48°	012-036-060-084-108	level girdle
P4	56.46°	120-024-048-072-096	level girdle, cut to meet P2, P3
P5	42.60°	007-017-031-041-055-065-079-089-103-113	meet girdle, new centerpoint

CROWN

C1	40.00°	120-024-048-072-096	cut to level girdle, determine girdle thickness
C2	31.00°	003-021-027-045-051-069-075-093-099-117	cut to meet girdle
C3	18.40°	120-024-048-072-096	cut to meet apex C1
C4	36.25°	012-036-060-084-108	cut girdle, meet C1, C2, C3
C5	10.00°	006-018-030-042-054-066-078-090-102-114	cut to meet apex C4
T	0.00°	Table	cut to meet apex C3

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