

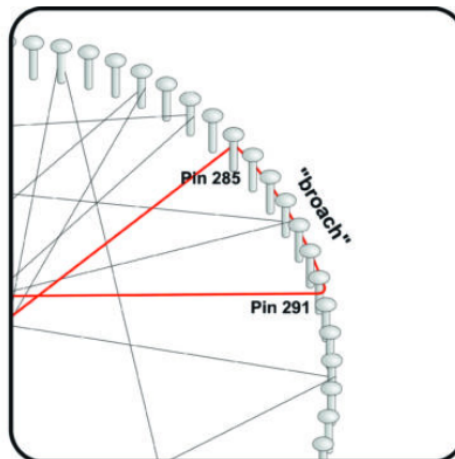
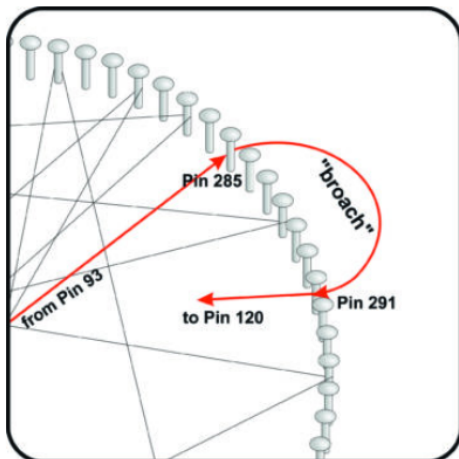
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of Strings:

<https://s-art.pro/iris.html>

Instruction

- Email with Instruction also include a PDF file with Template. Template contains the diameter of the work and the number of pins that you set during generation to Iris. **You cannot use a frame with a different number of pins !!!**
- Spools of threads are best placed in sufficiently long "medical nets" - the thread will conveniently go off the spools and will not get tangled. You will have to fasten the thread of the current color several times and switch to an other color.
- Place the frame at a comfortable height, you might enjoy working on an artist's easel.
- Pin number "0" should be on the right on "3 o'clock".
- Attach the thread of the first color to the pin with the indicated number.
- Next, pull the thread through the field of work to the next pin. Without fastening the thread, pull it out of the field of work to the next pin. This is the specificity of full-color stringart, without such an approach it is impossible to get a high-quality image. Nevertheless, Iris tries to reduce the distance of "broaches" as much as possible, and from the middle of the work there will be less and less "broaches".



The Figure shows how to do the "broach":

(1) Red: 36-57, **93-285, 291-120**, 127-260, ...

or

(2) Red: 57~**93, 285~291, 120**~127, 260~...

(1) and (2) – is a two types of notation of the same "chain"

- When you need to change the color, it is advisable to secure the thread on the pin with a knot.
- Work, especially when using the "Iris Speaker" app, moves quickly: https://s-art.pro/iris_speaker.html

Output notation type (1).

"Broaches" should be made according to the type (1) - see Figure on Page 1.

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Output notation type (2).

"Broaches" should be made according to the type (2) - see Figure on Page 1.

- " fix~238 " - the thread needs to be fixed on the pin 238 then continue with the current color.*
- " 17~fix " - the thread needs to be fixed on the pin 17 then change color.*
- " 25~231 " - requires an outer "broache" between pins 25 and 231, see Figure on Page 1*
- " 62~ " - just stretch the thread to pin 62, an outer "broache" to another pin is not required.*

Magenta: fix~280, 196~203, 279~261, 215~213, 262~268, 61~71, 199~200, 66~65, 161~169, 140~136, 3~21, 178~176, 51~52, 98~103, 239~187, 122~fix

Yellow: fix~63, 192~196, 62~56, 227~225, 158~159, 75~74, 182~190, 72~98, 283~278, 13~32, 269~243, 191~201, 122~117, 232~235, 111~114, 217~242, 107~fix

Black: fix~297, 108~106, 268~266, 111~112, 296~294, 217~224, 190~189, 123~121, 254~251, 185~186, 238~239, 32~26, 177~174, 41~, 7~6, 98~94, 19~47, 170~, 256~217, 60~76, 169~fix

Cyan: fix~243, 31~17, 254~272, 5~4, 273~280, 198~, 58~59, 197~, 238~236, 32~33, 232~231, 199~, 54~53, 202~196, 60~51, 210~219, 47~43, 222~229, 39~34, 231~229, 102~103, 163~165, 97~96, 174~177, 91~87, 157~152, 112~117, 138~183, 84~79, 185~189, 78~75, 190~192, 73~, 196~fix

Magenta: 122~145, 166~162, 64~65, 8~12, 37~39, 206~, 267~270, 205~, 49~50, 177~178, 134~128, 228~227, 18~22, 219~232, 105~104, 237~254, 98~95, 200~203, 60~55, 169~195, 111~85, 262~273, 76~68, 285~297, 37~fix

Black: 169~237, 91~101, 227~182, 131~122, 195~198, 5~7, 185~, 50~49, 191~200, 33~38, 79~77, 168~170, 73~83, 241~239, 48~25, 273~263, 294~fix

Yellow: 107~183, 73~108, 70~30, 173~171, 82~81, 175~177, 66~67, 210~208, 69~68, 170~169, 98~100, 243~253, 141~146, 216~213, 65~63, 217~218, 62~60, 235~228, 135~133, 234~, 116~112, 242~, 57~53, 246~249, 51~50, 250~252, 41~37, 261~255, 24~22, 271~272, 21~19, 274~fix

Cyan: 196~169, 111~140, 88~94, 175~181, 86~85, 182~184, 80~65, 218~219, 63~52, 207~197, 66~67, 195~191, 74~76, 235~, 33~30, 244~247, 25~20, 252~256, 14~7, 269~225, 41~fix

Magenta: 37~135, 236~239, 124~102, 247~253, 101~91, 259~258, 222~213, 50~55, 271~274, 48~38, 288~1, 201~202, 64~72, 196~195, 107~103, 243~241, 122~124, 183~fix

Black: 294~233, 297~291, 234~244, 75~69, 130~126, 229~228, 92~95, 14~6, 104~103, 212~209, 179~, 276~257, 112~118, 177~175, 3~298, 204~172, 27~31, 144~138, 46~60, 168~fix

Yellow: 274~19, 289~216, 26~24, 217~220, 61~57, 212~180, 63~65, 179~172, 67~76, 155~154, 103~, 205~207, 80~85, 195~188, 46~47, 264~265, 39~41, 248~247, 52~53, 244~251, 46~36, 273~266, 91~99, 155~149, 113~117, 142~141, 118~fix

Cyan: 41~280, 2~5, 279~267, 9~15, 255~246, 29~31, 238~230, 38~40, 227~221, 44~46, 220~217, 50~53, 206~201, 56~57, 186~190, 77~74, 195~213, 71~59, 176~175, 102~98, 163~147, 122~fix

Black: 168~237, 281~279, 105~103, 51~49, 135~124, 17~10, 156~159, 291~287, 225~227, 34~32, 142~143, 225~, 188~164, 265~35, 90~fix

Magenta: 183~177, 135~127, 178~179, 113~116, 192~186, 106~97, 199~198, 103~102, 252~297, 74~71, 282~283, 69~, 201~203, 58~57, 269~267, 83~88, 265~261, 89~96, 210~214, 49~40, 287~288, 26~24, 216~214, 28~fix

Yellow: 118~152, 110~109, 153~205, 82~83, 204~198, 127~128, 197~189, 99~96, 253~252, 45~46, 244~242, 55~57, 238~235, 62~64, 216~208, 72~87, 164~169, 227~247, 103~107, 178~158, 92~87, 267~271, 37~38, 254~fix

Cyan: 122~170, 110~106, 173~, 97~92, 176~179, 87~82, 181~206, 79~78, 207~224, 42~48, 219~214, 70~67, 215~216, 66~58, 184~187, 78~75, 238~234, 36~28, 247~248, 24~16, 254~266, 10~8, 268~270, 6~fix

Magenta: 28~77, 272~266, 86~87, 261~260, 90~91, 257~256, 92~95, 253~251, 113~118, 248~251, 230~242, 119~121, 190~196, 7~286, 41~48, 280~273, 49~50, 204~196, 105~136, 176~167, 143~fix

Black: 90~172, 56~80, 36~35, 192~187, 38~43, 183~184, 255~257, 72~73, 246~243, 81~87, 290~287, 179~, 95~99, 231~216, 8~13, 211~210, 115~136, 266~269, 26~23, 294~fix

Magenta: 143~80, 270~271, 79~78, 278~281, 73~47, 281~282, 45~43, 4~2, 69~70, 0~296, 204~186, 123~119, 191~193, 115~107, 225~231, 106~102, 202~198, 85~, 267~254, 94~95, 236~237, 94~93, 255~258, 155~208, 274~fix

Yellow: 254~17, 295~285, 25~29, 276~257, 32~37, 256~239, 56~88, 233~234, 73~68, 164~171, 225~229, 110~115, 215~209, 45~40, 253~252, 97~101, 248~243, 54~56, 186~195, 129~134, 230~238, 104~fix

Cyan: 6~265, 11~12, 263~260, 15~28, 286~290, 237~241, 29~32, 237~229, 42~43, 223~218, 49~53, 213~212, 72~77, 208~205, 54~57, 199~174, 95~101, 190~183, 81~88, 178~180, 59~60, 169~171, 108~107, 162~154, 115~117, 148~fix

Black: 294~35, 198~191, 40~43, 298~299, 200~218, 153~151, 60~57, 170~173, 109~103, 226~235, 28~26, 236~237, 287~277, 50~51, 181~, 87~97, 263~245, 103~97, 65~64, 133~118, 166~42, 139~, 82~107, 263~259, 147~176, 54~52, 178~187, 250~245, 209~213, 281~290, 119~120, 204~194, 27~33, 97~98, 11~fix

Yellow: 104~130, 84~81, 206~196, 104~108, 177~166, 67~63, 231~239, 79~76, 207~212, 66~65, 230~225, 90~91, 159~155, 260~256, 61~62, 254~269, 53~44, 271~272, 31~29, 280~282, 26~24, 287~294, 18~fix

Magenta: 274~252, 229~212, 263~8, 41~101, 47~49, 188~187, 86~82, 268~269, 112~113,

195~196, 110~114, 194~193, 0~299, 203~, 54~52, 271~276, 92~75, 280~284, 43~42, 5~3, 68~42, 208~205, 288~7, 135~137, 175~174, 138~140, 171~168, 141~fix

Cyan: 148~236, 35~50, 216~214, 52~74, 211~210, 75~76, 209~177, 89~90, 176~175, 93~104, 173~172, 107~114, 155~162, 193~194, 75~, 48~45, 220~228, 39~, 232~233, 37~36, 275~259, 18~, 253~249, 23~17, 296~fix

Black: 11~4, 99~76, 42~36, 191~183, 285~290, 107~105, 298~296, 167~151, 256~254, 220~201, 128~111, 261~fix

Yellow: 18~19, 292~284, 42~47, 270~263, 32~33, 249~246, 64~65, 242~236, 59~68, 209~207, 133~132, 259~235, 69~80, 226~223, 122~114, 85~84, 197~188, 111~81, 219~fix

Cyan: 296~261, 13~295, 18~19, 252~251, 21~22, 250~240, 27~31, 239~235, 198~203, 56~55, 209~211, 53~51, 215~217, 46~58, 195~194, 68~76, 193~186, 79~84, 179~178, 85~102, 178~174, 103~104, 162~147, 125~fix

Magenta: 141~176, 130~122, 188~189, 83~99, 51~35, 14~290, 204~202, 63~65, 201~200, 70~71, 198~197, 104~, 11~9, 40~45, 204~205, 44~, 283~285, 147~149, 270~, 111~108, 295~1, 146~139, 172~, 54~56, 270~275, 207~209, 264~260, 216~228, 253~fix

Black: 261~256, 168~169, 291~293, 265~281, 218~212, 298~3, 163~158, 17~19, 91~96, 12~11, 207~228, 100~84, 134~141, 63~78, 183~144, 37~fix

Yellow: 219~288, 20~17, 209~215, 65~66, 173~174, 63~, 251~, 110~116, 143~148, 71~69, 163~172, 81~93, 254~260, 60~58, 183~, 27~35, 182~193, 242~193, 49~fix

Magenta: 253~227, 254~257, 223~218, 259~261, 213~208, 265~266, 207~150, 267~268, 117~128, 177~186, 98~85, 188~189, 40~37, 13~9, 105~108, 8~5, 201~202, 0~292, 203~204, 53~fix

Black: 37~27, 61~55, 210~206, 112~110, 277~285, 204~203, 121~114, 256~247, 71~65, 15~10, 99~103, 1~268, 223~225, 141~135, 185~196, 129~fix

Cyan: 125~148, 121~116, 149~, 88~87, 113~, 156~161, 108~109, 160~158, 85~83, 180~182, 82~81, 184~185, 80~77, 192~193, 69~62, 194~197, 56~55, 198~204, 55~54, 210~211, 48~47, 212~222, 44~41, 227~238, 280~277, 33~26, 241~243, 24~23, 245~294, 21~fix

Red: fix~77, 145~fix

Magenta: 53~66, 7~10, 39~42, 285~279, 76~80, 277~276, 206~203, 80~84, 199~200, 82~81, 269~267, 118~120, 259~, 153~159, 88~108, 185~179, 127~226, 255~fix

Yellow: 49~92, 255~261, 59~61, 151~152, 35~, 162~167, 12~1, 217~220, 298~282, 121~115, 144~141, 70~30, 275~226, 170~fix

Black: 129~106, 291~3, 236~233, 38~28, 171~160, 86~73, 198~200, 72~66, 206~207, 60~22, 191~205, 153~216, 6~4, 220~fix

Yellow: 170~217, 143~140, 261~240, 197~211, 67~51, 270~264, 127~131, 293~8, 96~93, 17~fix

Cyan: 21~0, 21~22, 293~195, 59~57, 196~198, 47~43, 199~, 224~237, 35~37, 234~232, 38~40, 231~230, 41~42, 226~225, 43~44, 224~223, 200~201, 222~221, 45~46, 219~216, 47~, 24~23, 292~269, 248~247, 271~273, 246~242, 25~27, 291~289, 239~240, 30~32, 282~283, 29~28, 290~, 75~74, 49~50, 71~, 192~191, 78~79, 190~, 164~165, 80~, 189~188, 166~, 61~60, 194~193, 64~62, 162~163, 81~89, 112~, 157~158, 111~, 90~110, 159~151, 113~115, 150~149, 120~121, 143~fix

Magenta: 255~278, 204~210, 58~55, 277~245, 119~117, 272~264, 211~215, 25~11, 38~41, 187~182, 124~122, 193~203, 62~63, 164~158, 106~104, 43~46, 102~fix

Black: 220~140, 40~41, 87~99, 288~282, 108~109, 279~278, 161~173, 254~251, 120~115, 266~10, 211~195, 48~77, 18~fix

Red: 145~58, 237~242, 35~fix

Cyan: 143~103, 228~224, 106~140, 255~263, 100~86, 150~152, 85~84, 159~160, 83~82, 162~164, 205~197, 48~49, 196~189, 165~170, 293~279, 240~239, 33~34, 238~235, 36~278, 241~242, 277~276, 244~245, 275~fix

Yellow: 17~23, 259~182, 28~68, 191~198, 250~251, 99~101, 157~155, 289~292, 153~152, 293~296, 84~85, 40~38, 151~, 111~114, 146~163, 88~102, 243~242, 103~fix

Magenta: 102~101, 289~277, 205~202, 81~, 276~262, 118~121, 198~184, 123~126, 180~181, 125~124, 21~10, 63~51, 279~, 199~200, 6~8, 230~224, 256~257, 220~240, 133~fix

Black: 18~4, 162~171, 86~122, 262~258, 166~167, 257~255, 171~193, 246~, 180~186, 130~126, 226~227, 107~108, 287~285, 24~27, 115~113, 205~228, 84~, 265~264, 90~93, 1~2, 164~, 277~275, 32~12, 68~, 251~247, 80~83, 229~fix

Red: 35~278, 200~196, 86~67, 5~4, 106~109, 230~236, 105~102, 189~178, 75~, 204~, 11~9, 245~244, 20~13, 163~142, 40~43, 206~222, 93~124, 223~fix

Cyan: 275~279, 164~163, 280~281, 162~fix

Yellow: 103~148, 113~112, 150~161, 90~98, 158~157, 220~221, 156~160, 269~263, 57~, 184~187, 54~58, 262~248, 71~74, 232~231, 75~79, 227~279, 43~36, 294~fix

Magenta: 133~105, 159~206, 269~260, 294~295, 257~fix

Black: 229~234, 33~31, 283~289, 47~45, 206~201, 138~124, 1~9, 213~211, 125~129, 23~, 71~76, 197~191, 52~53, 177~175, 251~247, 135~133, 266~265, 103~, 27~24, 119~123, 43~42, 195~, 245~, 158~147, 246~256, 144~142, 58~64, 100~109, 263~277, 208~182, 83~fix

Red: 223~167, 92~73, 172~182, 64~68, 243~272, 51~, 193~202, 119~142, 214~211, 94~95, 134~130, 232~233, 60~64, 250~245, 32~38, 293~278, 77~78, 241~240, 84~89, 215~218, 20~fix

Yellow: 294~102, 155~159, 97~89, 162~163, 31~44, 277~275, 46~50, 273~272, 120~124, 271~267, 127~129, 261~264, 56~53, 188~194, 241~245, 72~74, 241~239, 199~198, 83~86, 235~229, 206~177, 59~22, 287~258, 141~fix

Black: 83~80, 193~192, 81~91, 39~38, 142~141, 68~66, 152~159, 279~286, 110~114, 252~248, 179~180, 36~34, 199~198, 41~42, 2~3, 155~154, 282~, 206~202, 293~9, 101~119, 263~252, 174~195, 229~243, 129~fix

Red: 20~89, 224~223, 91~, 203~208, 61~67, 244~262, 86~85, 237~238, 80~82, 265~285, 47~48, 283~281, 49~52, 192~, 100~95, 159~139, 251~249, 7~34, 243~230, 125~120, 199~fix

Yellow: 141~118, 274~278, 30~28, 164~151, 107~106, 152~154, 104~87, 234~232, 90~98, 156~155, 222~211, 59~58, 181~168, 66~67, 167~165, 68~73, 243~262, 35~53, 267~266, 54~55, 265~fix

Black: 129~112, 178~187, 291~292, 158~166, 52~36, 195~194, 291~290, 205~207, 281~270, 148~144, 53~64, 26~29, 101~100, 30~31, 98~102, 8~3, 103~104, 0~1, 179~, 48~45, 90~, 296~295, 125~114, 260~266, 235~239, 180~179, 108~106, 298~292, 240~fix

Red: 199~253, 99~100, 50~66, 249~238, 17~294, 122~127, 18~23, 217~206, 90~83, 264~276, 135~136, 240~242, 76~78, 149~180, 29~fix

Yellow: 265~38, 180~195, 64~62, 174~171, 117~128, 263~247, 201~205, 230~223, 80~93, 161~, 268~, 52~51, 269~274, 31~32, 162~154, 290~286, 25~27, 281~276, 45~39, 179~, 59~60, 152~fix

Black: 240~276, 231~232, 269~259, 115~126, 176~161, 256~245, 74~82, 230~, 9~, 268~264, 86~89, 178~179, 41~32, 94~, 263~262, 110~111, 285~, 48~51, 146~, 224~225, 127~128, 224~207, 6~296, 110~107, 18~14, 157~154, 203~202, 162~, 220~223, 131~130, 241~240, 99~102, 28~31, 196~178, 44~59, 114~fix

Red: 29~16, 248~218, 0~279, 123~103, 45~40, 173~, 72~62, 200~191, 101~100, 299~, 219~, 258~256, 297~292, 132~130, 210~213, 57~53, 178~184, 109~114, 211~212, 92~88, 242~237, 137~136, 268~263, 84~86, 290~291, 82~fix

Yellow: 152~181, 36~95, 147~141, 15~0, 61~, 175~173, 64~71, 15~24, 133~137, 99~105, 44~50, 271~274, 144~, 13~10, 94~91, 230~233, 204~203, 235~238, 200~199, 249~269, 147~170, 121~, 271~fix

Red: 82~39, 292~2, 154~169, 53~48, 180~181, 113~111, 12~, 279~268, 15~10, 130~129, 255~259, 217~216, 141~135, 9~6, 96~91, 213~215, 260~249, 101~109, 69~70, 234~245, 135~fix

Black: 114~70, 249~259, 177~187, 97~102, 288~4, 233~235, 32~, 62~61, 150~148, 78~, 231~228, 104~109, 297~295, 208~204, 116~118, 15~19, 105~, 262~, 160~162, 229~, 10~12, 165~157, 267~270, 155~152, 272~283, 51~38, 200~195, 77~, 152~143, 79~80, 141~173, 33~fix

Yellow: 271~199, 82~74, 209~223, 70~48, 275~274, 49~55, 160~, 94~107, 26~8, 144~145, 271~270, 125~126, 269~266, 148~142, 277~275, 123~111, 86~96, 139~125, 166~200, 248~236, 201~204, 79~75, 208~210, 71~66, 171~176, 60~54, 161~164, 40~28, 280~262, 22~9, 95~, 157~153, 3~fix

Black: 33~12, 66~146, 67~103, 7~296, 124~134, 240~250, 69~72, 100~101, 238~235, 261~271, 23~20, 276~283, 205~, 46~50, 202~199, 55~56, 198~194, 59~57, 173~172, 117~123, 213~218, 104~103, 229~233, 36~34, 93~96, 246~248, 78~84, 190~163, 219~fix

Red: 135~208, 132~166, 93~104, 242~241, 105~107, 240~238, 111~116, 191~186, 42~45, 184~179, 49~, 101~100, 250~248, 8~9, 64~67, 248~246, 69~77, 154~150, 269~278, 53~58, 212~209, 59~40, 291~280, 122~131, 230~243, 22~fix

Yellow: 3~8, 152~151, 12~14, 143~138, 266~267, 36~34, 268~271, 32~48, 102~100, 169~200, 81~80, 201~207, 77~, 229~228, 78~120, 263~fix

Red: 22~17, 247~255, 298~282, 148~143, 30~31, 127~134, 50~47, 182~185, 121~119, 16~13, 269~268, 207~212, 262~261, 214~227, 95~86, 227~230, 76~85, 197~fix

Black: 219~178, 109~113, 177~172, 58~43, 280~, 214~213, 70~71, 204~199, 164~161, 0~, 29~, 234~233, 34~21, 103~102, 236~239, 93~91, 248~249, 73~72, 191~, 292~, 266~268, 233~227, 271~262, 87~89, 241~227, 131~133, 221~220, 134~135, 218~223, 105~104, 224~212, 143~144, 210~209, 147~121, 297~298, 120~fix

Yellow: 263~5, 157~153, 105~125, 274~284, 26~33, 157~162, 52~67, 192~202, 79~78, 206~fix

Red: 197~211, 263~21, 244~246, 18~11, 282~296, 136~, 244~, 72~74, 179~177, 54~53, 183~185, 43~, 288~287, 44~41, 290~284, 48~49, 170~153, 59~52, 279~280, 50~68, 110~117, 189~209, 131~134, 238~241, 77~75, 242~259, 127~145, 98~fix

Black: 120~177, 224~233, 105~, 1~6, 219~221, 3~2, 104~, 20~, 51~54, 200~198, 125~121, 292~290, 46~44, 91~92, 35~33, 125~135, 80~68, 244~242, 160~163, 261~, 113~115, 205~210, 281~280, 155~157, 269~263, 101~102, 23~22, 130~127, 190~193, 61~62, 149~141, 229~233, 170~171, 261~299, 107~85, 48~fix

Yellow: 206~167, 124~122, 169~233, 83~90, 132~146, 270~, 33~fix

Black: 48~30, 72~76, 170~178, 72~56, 11~16, 273~274, 187~184, 276~292, 233~, 30~25, 270~262, 116~100, 264~266, 206~205, 149~146, 253~246, 105~103, 235~, 153~156, 89~, 298~297, 123~124, 202~201, 157~163, 200~, 61~, 216~220, 125~133, 81~83, 253~255, 225~223, 88~87, 46~49, 189~188, 66~71, 139~135, 58~57, 6~3, 207~fix

Red: 98~99, 2~34, 134~131, 0~292, 84~80, 235~240, 79~76, 191~194, 73~74, 243~244, 103~111, 162~168, 101~, 247~, 68~67, 170~, 108~111, 182~183, 46~45, 286~289, 42~49, 282~275, 136~137, 267~, 147~140, 260~265, 210~211, 69~70, 246~245, 19~5, 247~245, 71~62, 219~225, 88~87, 226~230, 85~89, 207~208, 267~268, 126~119, 188~204, 90~98, 4~, 57~fix

Black: 207~236, 291~296, 109~108, 298~5, 232~227, 252~264, 112~114, 176~177, 38~39, 141~144, 227~215, 299~0, 106~101, 4~3, 102~, 71~69, 215~, 7~9, 212~, 74~76, 254~257, 88~91, 240~245, 149~150, 204~208, 148~145, 52~49, 284~, 180~181, 93~92, 210~, 127~123, 46~42, 19~17, 63~78, 194~197, 291~281, 154~167, 198~175, 40~fix

Red: 57~96, 146~198, 84~83, 200~218, 63~64, 217~216, 65~67, 213~212, 68~73, 180~187, 120~122, 153~, 22~, 134~138, 98~102, 245~253, 0~299, 254~258, 128~129, 25~27, 272~271, 118~119, 261~266, 209~, 69~70, 208~205, 73~72, 206~207, 71~, 182~184, 44~58, 3~1, 59~89, 150~149, 280~279, 152~155, 16~fix

Yellow: 33~27, 283~264, 20~21, 263~168, 123~fix

Black: 40~129, 82~23, 128~115, 14~16, 64~57, 28~29, 126~124, 212~210, 146~155, 203~206, 277~279, 156~157, 276~263, 159~162, 201~199, 166~169, 88~90, 251~254, 105~104, 256~258, 102~, 210~, 76~74, 138~140, 69~, 221~223, 4~299, 30~35, 285~287, 233~232, 293~295, 45~44, 183~173, 55~57, 143~, 247~243, 152~153, 228~216, 5~8, 214~212, 71~70, 103~106, 240~fix

Red: 16~248, 115~119, 247~244, 73~74, 228~203, 82~90, 147~141, 31~28, 269~262, 139~138, 263~265, 128~126, 273~271, 31~37, 166~169, 110~, 183~181, 72~66, 214~220, 79~80, 205~204, 60~62, 186~192, 56~55, 159~154, 18~15, 156~157, 57~58, 154~, 99~97, 5~4, 249~250, 3~2, 251~252, 1~285, 46~47, 162~fix

Black: 240~234, 267~266, 198~154, 241~240, 163~160, 210~207, 68~62, 143~145, 255~253, 77~78, 203~202, 82~81, 231~, 294~, 47~, 122~, 264~265, 116~, 48~43, 297~296, 107~110, 177~175, 120~125, 218~219, 93~94, 180~183, 57~53, 102~103, 2~13, 277~, 189~190, 87~83, 191~187, 287~280, 38~79, 252~243, 99~fix

Red: 162~69, 224~240, 90~83, 199~187, 61~65, 175~158, 56~55, 161~, 113~119, 270~286, 30~20, 125~127, 266~257, 121~, 154~, 21~24, 130~136, 94~97, 162~, 54~46, 163~167, 43~38, 165~, 94~93, 228~229, 92~, 238~239, 91~, 141~145, 278~273, 151~153, 7~fix

Black: 99~144, 54~55, 137~139, 83~72, 183~177, 73~74, 176~171, 51~50, 114~118, 187~249, 153~152, 251~252, 89~92, 196~194, 126~129, 187~185, 62~64, 212~, 6~10, 62~61, 215~214, 62~63, 109~111, 260~263, 166~168, 240~244, 98~100, 207~205, 122~121, 17~20, 269~268, 158~161, 203~204, 294~, 35~32, 298~1, 104~105, 230~231, 8~7, 232~234, 289~284, 45~43, 15~4, 217~219, 80~77, 149~154, 271~fix

Red: 7~50, 163~164, 45~44, 165~172, 65~63, 177~183, 63~57, 191~196, 67~80, 208~221, 78~77, 222~234, 81~, 204~201, 82~84, 231~229, 86~93, 137~140, 92~91, 146~150, 279~269, 120~122, 267~256, 118~115, 160~162, 102~126, 19~6, 154~176, 64~62, 184~195, 71~, 224~222, 73~75, 192~188, 60~59, 189~190, 58~51, 162~163, 96~95, 164~161, 103~104, 160~159, 116~115, 167~168, 111~119, 254~253, 120~, 155~132, 22~23, 131~121, 268~233, 82~83, 232~fix

Black: 271~269, 151~161, 273~297, 106~105, 299~8, 59~63, 213~202, 259~258, 99~98, 198~189, 128~, 209~208, 64~66, 24~27, 280~285, 12~10, 57~56, 29~36, 282~, 162~165, 279~278, 39~, 176~, 250~249, 188~187, 258~, 148~150, 224~, 79~78, 225~, 145~151, 68~67, 126~, 201~, 174~175, 115~, 49~47, 86~, 211~212, 84~87, 205~203, 89~93, 191~192, 267~266, 181~161, 71~70, 220~217, 155~157, 214~, 81~75, 228~232, 264~262, 102~106, 242~260, 96~fix

Red: 232~223, 72~, 194~193, 74~75, 227~226, 76~87, 135~134, 88~89, 133~119, 156~157, 118~117, 158~, 97~93, 157~185, 61~60, 186~fix

Black: 96~27, 275~272, 15~17, 270~271, 152~, 247~, 104~113, 51~, 23~22, 275~, 11~12, 274~, 27~30, 279~, 18~, 269~, 154~, 245~, 97~, 236~, 98~, 211~, 176~, 264~, 167~, 241~, 156~, 252~, 148~149, 256~, 185~, 260~, 172~, 242~, 153~, 270~, 151~, 254~, 198~, 256~, 150~, 82~, 227~, 105~, 260~, 166~, 249~, 158~, 239~, 175~, 265~266, 202~, 172~, 74~, 222~, 128~, 215~, 162~, 262~, 169~, 85~, 199~, 94~, 191~, 257~, 174~, 212~, 158~, 272~273, 13~, 284~288, 34~35, 287~286, 36~, 278~, 205~, 126~, 21~, 274~, 10~, 59~, 11~, 61~, 143~144, 67~, 217~, 170~, 261~, 184~, 219~, 99~, 235~234, 104~, 261~, 165~, 264~, 161~, 251~, 164~, 206~, 84~, 225~, 103~, 262~, 163~, 278~, 158~, 219~, 131~, 80~79, 132~133, 77~78, 145~, 59~58, 108~109, 57~56, 110~, 55~, 143~141, 67~, 106~107, 66~, 142~, 80~, 188~, 257~, 148~, 63~, 209~, 86~, 183~, 262~, 177~, 249~, 103~, 257~,

149~, 207~, 90~, 175~, 112~, 53~, 26~, 273~, 22~, 54~, 111~, 176~, 256~, 106~, 258~, 189~, 87~, 208~, 160~, 281~, 17~, 280~, 6~5, 271~, 18~, 123~, 203~, 171~, 260~, 184~, 96~, 189~, 255~, 192~, 74~, 37~, 281~, 5~4, 210~, 84~, 219~, 83~, 222~, 179~, 88~, 188~, 97~, 259~, 108~, 65~, 205~, 91~, 182~, 115~116, 174~, 73~, 182~, 265~, 231~, 290~, 195~, 246~, 178~, 124~, 19~, 270~, 228~, 81~, 140~, 62~, 142~, 64~, 147~, 225~, 85~, 194~, 247~, 192~, 127~126, 197~, 88~, 187~, 255~, 178~, 262~, 233~232, 288~, 190~, 95~, 185~, 118~119, 183~, 80~, 229~, 269~, 155~, 253~, 194~, 90~, 185~, 218~, 132~, 78~, 40~41, 77~, 226~, 82~, 223~, 73~, 213~, 83~, 226~227, 76~, 146~, 254~, 193~, 275~, 31~32, 71~, 215~, 77~, 220~, 183~, 250~, 162~, 244~, 196~, 79~, 191~, 276~, 156~, 268~, 230~, 79~, 144~, 60~, 9~, 58~, 8~, 269~, 152~, 244~, 104~, 69~, 134~, 77~, 219~, 91~, 193~, 121~, 181~, 92~, 202~, 125~, 216~, 68~, 135~, 65~, 25~, 54~, 101~, 215~, 86~, 191~, 248~, 151~, 252~, 159~, 211~, 75~, 168~, 263~, 160~, 271~, 24~, 293~294, 39~38, 279~, 154~, 231~230, 266~, 193~, 86~, 224~, 72~, 214~, 153~, 204~, 92~, 239~, 181~, 220~, 76~, 135~136, 75~, 171~, 216~, 70~, 33~, 297~296, 44~46, 295~296, 34~32, 281~282, 16~, 271~, 159~, 259~, 172~, 240~, 179~, 123~, 198~, 95~, 216~, 85~, 218~, 92~, 192~, 251~, 150~, 270~, 7~, 279~, 29~, 277~, 20~21, 49~, 24~, 46~, 0~294, 19~, 278~, 8~9, 277~276, 15~, 282~283, 14~, 272~, 23~21, 276~, 10~, 60~63, 139~138, 64~, 137~136, 65~, 146~147, 253~, 188~, 259~, 186~, 89~, 237~, 96~, 214~, 129~, 221~, 90~89, 222~, 96~97, 213~, 100~, 216~, 163~, 263~, 162~, 241~, 173~, 258~, 170~, 84~, 200~, 93~, 237~238, 94~, 217~, 160~, 258~, 172~, 214~, 165~, 250~, 151~, 259~, 169~, 203~, 87~, 182~, 261~, 168~, 204~, 166~, 243~, 105~, 68~, 148~150, 255~, 153~, 246~, 170~, 245~, 156~, 243~, 171~, 244~, 155~, 252~, 195~, 89~, 48~50, 92~93, 206~, 161~, 216~217, 102~103, 219~220, 130~, 81~82, 145~, 66~63, 129~122, 180~, 87~, 188~, 254~, 190~, 249~, 167~, 213~, 173~, 257~, 178~179, 261~, 167~, 262~, 164~, 215~214, 100~, 218~, 159~, 241~240, 157~, 250~, 193~191, 252~, 182~, 120~104, 223~221, 75~74, 169~, 247~, 186~, 254~, 154~, 253~, 181~, 255~, 185~, 248~, 168~, 260~, 170~, 265~264, 162~161, 263~, 203~204, 86~, 190~, 252~251, 156~, 244~243, 157~, 242~, 158~155, 246~247, 154~153, 254~, 180~, 221~, 97~, 52~83, 201~200, 85~, 205~, 165~, 263~, 177~, 258~, 183~, 257~256, 152~, 249~, 184~, 256~, 175~, 260~, 181~180, 256~, 179~180, 261~, 169~168, 262~, 166~, 214~212, 99~98, 220~221, 104~97, 210~208, 95~94, 236~240, 174~, 261~262, 165~164, 264~, 171~, 259~, 176~173, 262~263, 172~167, 263~, 164~163, 264~, 166~153, 248~253, 189~182, 259~230, 151~198, 87~86, 199~202, 88~94, 207~fix, end.