

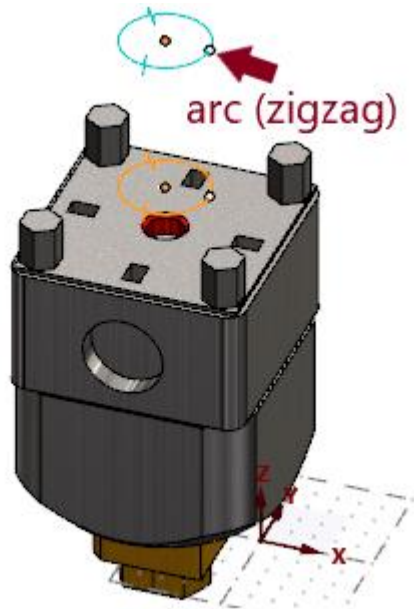
X+ Electrodes Report

The Mastercam add-on "**X+ Electrodes Report**" makes it easy to create documentation about electrodes. In addition, Java Script can also be used to create a post-processor that generates NC output for a die-sinking EDM machine.

2 rules are to be followed absolutely!

In order for the electrodes to be correctly identified, 2 rules must be followed.

1. Each electrode **must be placed on its own level**.
2. Each electrode has **at least 1 reference point**, which must be on the same level.
Reference points are arc elements with the line style Zigzag.



Reference points

Reference points are used to identify a level on which an electrode is located.

Any number of reference points can be created on the level. Often, however, only 2 are needed. The first reference point is usually used as a safety distance or start position. The second reference point is then used as the focal position or target position.

Tip:

Reference points can be stored together with the electrode clamping device. The electrode clamping device can then be easily integrated with the **X+ merge fixture** tool.

Report layout

The layout of a report is controlled by the CSS file. Together with JavaScript all doors are open. For example, a postprocessor can also be written that generates the NC output for a die-sinking EDM machine. For illustration some templates are already pre-installed with X+.

Use level name & level set name to setup your electrodes

Nummer	S...	Bezeichnung	Layersatz	Elemente
101		el1-1	300, 0.2	4
201		el2-1	300, 0.4, 0.2	4
202		el2-2		4
203		el2-3		4
204		el2-4		4
301		el3-1	300, 0.4, 0.2	4
302		el3-2		4
401		el4-1	300, 0.4, 0.2	8
402		el4-2		4
✓ 10000	X	formkern		1

You can use **Level Name** to name your electrodes.

Level Set Name can also be used as additional information.

[Example 2](#) shows a layout where level name is used to group the electrodes and level set name is used to describe the technology.

HTML structure

What information is output?

To illustrate, here is the HTML structure of a report from a single electrode:

```

<!DOCTYPE html>
<html>
  <head>
  </head>
  <body>
    <div class="report">
      <div class="report_header">
        <div class="part_screenshot"></div>
        <div class="date">2023-09-23</div>
        <div class="user">GMCCS</div>
        <div class="part_file_path">C:\Users\GMCCS\Desktop</div>
        <div class="part_file_name">formkern</div>
      </div>
      <div class="notes">
        <div class="note"></div>
        <div class="note"></div>
        <div class="note"></div>
        <div class="note"></div>
        <div class="note"></div>
        <div class="note"></div>
        <div class="note"></div>
        <div class="note"></div>
      </div>
      <div class="electrodes">
        <div class="electrode">
          <div class="level">
            <div class="level_name">el1-1</div>
            <div class="level_set_name">300, 0.2</div>
            <div class="level_number">101</div>
          </div>
          <div class="electrode_screenshot"></div>
          <div class="ref_points">
            <div class="ref_point">
              <div class="pos_x">0.00</div>
              <div class="pos_y">0.00</div>
              <div class="pos_z">130.00</div>
              <div class="pos_c">0.00</div>
              <div class="color_index">82</div>
              <div class="color_hex">#00cccc</div>
            </div>
            <div class="ref_point"></div>
          </div>
        </div>
      </div>
    </div>
  </body>
</html>

```

The **report_header** block is inserted automatically. Each element can be hidden by CSS if needed.

This is followed by the **notes** block. (Additional information about the report).

All electrodes are enclosed in the **electrodes** block. Each electrode in turn in the block **electrode**.

The block electrode then again contains the blocks **level**, **electrode_screenshot** and **ref_points**.

level contains the following information:

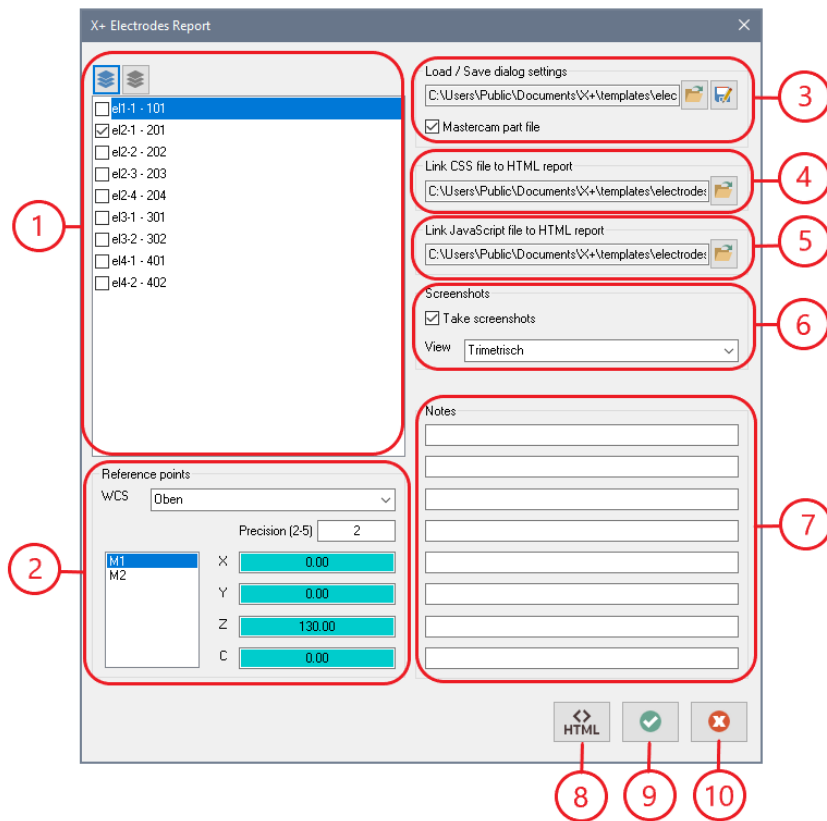
- Level number
- Level name
- Level set name

ref_points contains all reference points. Each reference point is stored in the **ref_point** block.

ref_point contains the following information:

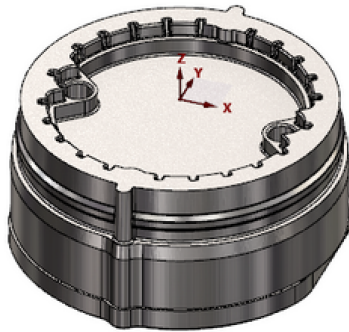
- The 3D position to the selected layer (see pos 2 [dialog elements](#)).
- The C rotation (comes from the arc)
- The color as a hex value
- The color as Mastercam color number

Dialog elements



1. List of identified electrodes
2. Information about the selected electrode from the list (reference points)
3. Load & Save dialog settings (Templates)
4. CSS file that should be linked to the HTML report
5. JavaScript file to be assigned to the HTML report
6. Create screenshots (Yes/No) and from which view
7. Additional information/comments displayed in the report
8. Creates an HTML report from the selected electrodes
9. Applies the settings and closes the dialog
10. Cancel

Example 1



X+ Electrodes - Report

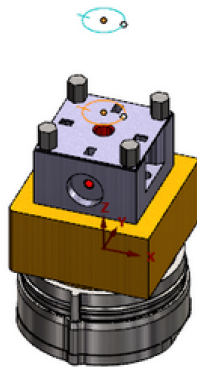
Date: 2023-09-25

User: GMCCS

Full path: C:\Users\GMCCS\Desktop

Mastercam file: formkern

Notes



Level information

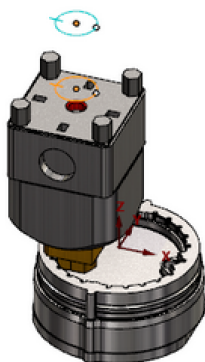
Name: el1-1

Level set: 300, 0.2

Level #: 101

Reference points

1)	X0.00	Y0.00	Z130.00	C0.00	Color#82	RGB:#00cccc
2)	X0.00	Y0.00	Z77.44	C0.00	Color#94	RGB:#ff9900



Level information

Name: el2-1

Level set: 300, 0.4, 0.2

Level #: 201

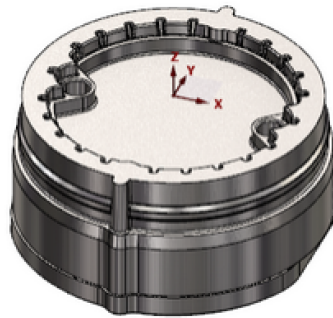
Reference points

1)	X-18.42	Y-8.52	Z130.00	C0.00	Color#82	RGB:#00cccc
2)	X-18.42	Y-8.52	Z92.25	C0.00	Color#94	RGB:#ff9900



Level information

Example 2



X+ Elektroden Report / Ingersol

Datum: 2023-09-25

User: GMCCS

Datei-Pfad: C:\Users\GMCCS\Desktop

Mastercam Datei: formkern

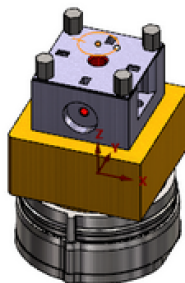
Notes

MyWorkpiece

Post for Ingersol

Layerbezeichnung = Elektrodenname und Position ([name]-[position])

Layersatz = Technologie ([orbit], [1.Untermass], [2. Untermass], ... [n. Untermass])



EL1

TECHNOLOGY	
Orbit	1.
300	0.2mm

POSITIONS					
#	SX	SY	SZ	SC	DZ
1.	0.00	0.00	130.00	0.00	0.00



EL2

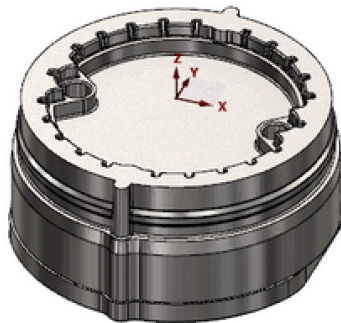
TECHNOLOGY		
Orbit	1.	2.
300	0.4mm	0.2mm

POSITIONS					
#	SX	SY	SZ	SC	DZ
1.	-18.42	-8.52	130.00	0.00	0.00
2.	18.42	8.52	130.00	180.00	180.00
3.	18.42	-8.52	130.00	0.00	0.00
4.	-18.42	8.52	130.00	180.00	180.00



EL3

Example 3



X+ Electrodes - Report

Date: 2023-09-25

User: GMCCS

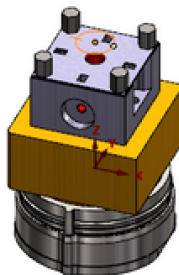
Full path: C:\Users\GMCCS\Desktop

Mastercam file: formkern

Notes

EL1-1

Level set: 300, 0.2
Level #: 101



Start

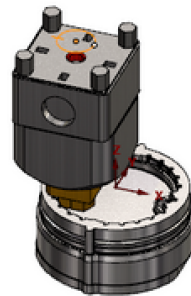
X: 0.00
Y: 0.00
Z: 130.00
C: 0.00

Dest

X: 0.00
Y: 0.00
Z: 77.44
C: 0.00

EL2-1

Level set: 300, 0.4, 0.2
Level #: 201



Start

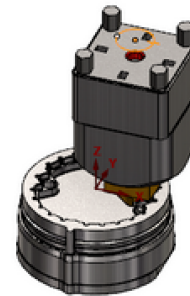
X: -18.42
Y: -8.52
Z: 130.00
C: 0.00

Dest

X: -18.42
Y: -8.52
Z: 92.25
C: 0.00

EL2-2

Level set:
Level #: 202



Start

X: 18.42
Y: 8.52
Z: 130.00
C: 180.00

Dest

X: 18.42
Y: 8.52
Z: 92.25
C: 180.00

EL2-3

Level set:
Level #: 203



EL2-4

Level set:
Level #: 204



EL3-1

Level set: 300, 0.4, 0.2
Level #: 301

