DIECAD NT Version 10.5

TABLE OF CONTENTS:

1.	**Toolbar**	1
2.	**Definition of Points**	51
3.	**Toolboxes**	73
3.1	**Last Used Files**	
3.2	**Defined Standards**	
3.3	**Construction**	
3.4	**Geometry**	
3.5	**Manipulation**	
3.6	**Move**	
3.7	**Copy**	
3.8	**Change**	
3.9	**Aux-Types**	
3.10	**Show**	
3.11	**Delete**	
3.12	**Blank**	
3.13	**Text**	
3.14	**Dimensioning**	
3.15	**User Defined Toolbox**	
3.16	**Measure**	

You can always return to the Table of Contents by clicking the respective **DIECAD** icon on top of the first page of each chapter.

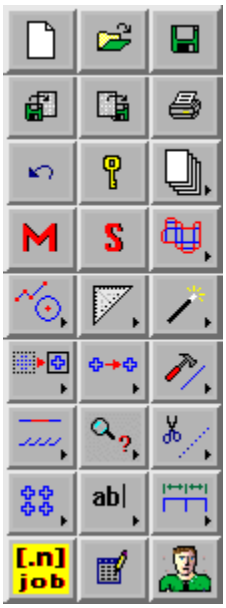
DIECAD NT Version 10.5

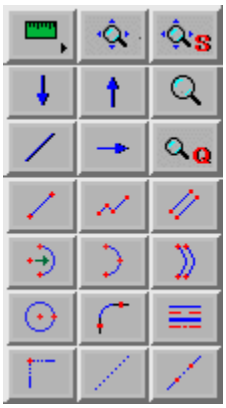
1. Toolbar

The toolbar is located on the left side of the desktop. You will find links to the individual toolboxes as well as commands for administrative functions such as “Load”, “Save” or database call-up.

You can also select line types and carry out sectionings. In the lower part of the toolbar there are some of the most commonly used commands for designing in DIECAD NT.

The functions of the toolbar are described in full detail in the following. You can automatically access the respective help functions by clicking the appropriate buttons in the toolbox.





The toolbar above is shown divided into the upper and lower part.

File New Start

You can create a new file with this function. If a design has been loaded already it will be deleted but not before a security query.
The currently opened design must be saved before a new start or it will be lost.

File Load .N:

You can load a design with this function that has been saved before.
In contrast to the data base call up from the menu with this option no file selection box is displayed.
Instead you have the option to start the data base with this function and load your file from this data base.

File Save .N:

With this function you can save a design created earlier. In contrast to the save function in the menu no file selection box is shown.
Instead you have the option to start the data base with this function and save the file there.

File Import:

With this function you can access **Nconvert** program. Here, you can open a file with a foreign format and save it in .N-format. When you close **Nconvert** the converted file is loaded directly to **DIECAD NT.**

File Export:

With this function you can access the **Nconvert** program. The file created earlier in **DIECAD NT** is opened in .N format. You can now convert the design into a foreign format contained in **Nconvert.**

Print:

With this function you can print a design created or opened earlier to a laser printer.

If you want to use an ink jet printer select “file export” and print from **Nconvert.**

Undo:

Reverses recent changes and recreates the last state of design.

Warm Start:

Here you can recall the last design which was on the screen when you last clicked the icon **Drawing.**

Last Files:

Here, the toolbox **Last Files** is opened.

(If you want to read the help text for this function please click on the green text.)

Call up Standards:

Here, you can call up all standards available in DIECAD NT.
The icon does not generate a file selection box in contrast to the function in the menu bar. Instead the system asks directly for the name of the standard.

Access of Macros:

Here you can access all macros available in **DIECAD NT**. The icon does not generate a file selection box in contrast to the function in the menu bar but it asks directly for the name of the macro.

Toolbox Defined Standards:

Here, you can open the toolbox **Defined Standards.**

(If you want to read the help text for this function please click on the green text.)

Toolbox Construction:

Here, the toolbox **Construction** is opened**.**

(If you want to read the help text for this function please click on the green text.)

Toolbox Geometry:

Here, the toolbox **Geometry** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Manipulation:

Here, the toolbox **Manipulation** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Move:

Here, the toolbox **Move** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Copy:

Here, the toolbox **Copy** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Change:

Here, the toolbox **Change** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Auxtypes:

Here, the toolbox **Auxtypes** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Delete:

Here, the Toolbox **Delete** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Show:

Here, the toolbox **Show** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Blank:

Here, the toolbox **Blank** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Text:

Here, the toolbox **Text** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Dimensioning:

Here, the toolbox **Dimensioning** is opened.

(Wenn Sie den Hilfetext für diese Funktion lesen wollen, klicken Sie bitte den grün markierten Text.)

Access NJob:

If this button is clicked the currently open file is opened in the jobcard program **Njob**.

Please find more information about **Njob** in the **Njob** manual.

Access Data Base:

Click this button and the DIECAD data base is opened.

User defined Toolbox:

here, the **User defined Toolbox** is opened.

(If you want to read the help text for this function please click on the green text.)

Toolbox Measure:

Here, the toolbox **Measure** is opened.

(If you want to read the help text for this function please click on the green text.)

Zoom Function drawing:

The entire loaded design is shown.

Zoom Function Drawing Section:

The section currently selected is shown.

Zoom function Enlarge in Frame:

The area you want to zoom in is dragged with a bounding frame from the lower left corner to the top right corner.

Zoom Function Enlarge with right Mouse Key:

Click on the area you want to enlarge with the right mouse button after you have called up the function.

Create section on a Lower Level:

After you have accessed this function a section is created on a lower level.

Create section on a Higher Level:

After you have accessed this function a section is created on a higher level.

Create Section on the same Level:

After you have accessed this function a section is created on the same level.

Change to another Section:

After you have called up this function click the respective drawing element and the system will change to the section in which this element is located.

Construction Line from to:

For this function you have to define the starting and end point of each subsequent line.

From *Define the starting point of the line.*

To *Define the end point of the line.*

From *Define the starting point of the following line.*

To *Define the end point of this line, and so on.*

Construction Line:

For this function you only have to define the starting and end point of the first line. For all following lines only the end point must be defined respectively.

From *Define the starting point of the line.*

To *Define the end point of the line.*

To *Define the end point of the following line, and so on.*

Line Parallel:

In contrast to the functions **Line parallel in x** and **Line parallel in y** the lines designed with this function do not align flush with the direction of the axes.

The parallel line has the currently selected line type.

In contrast to the functions **Line Parallel Multiple**, **Line Parallel in x** and **Line Parallel in y** this function allows you to draw parallel lines to several different original lines.

Line	*Click the original line.*
Distance	*Enter the distance between the original line and the parallel line to be drawn.* Note: A positive value places the parallels above, a negative value below the original line. For vertical lines, a positive value places the parallels on the right side of the original line and a negative value on the left side of it.
Line	*Click the next line to which you want to draw a parallel line.*

Arc from Radius and End Point:

From *Define the starting point of the arc.*

Radius *Define the radius.*

To *Define the arc end point.*

Arc from Through Point and End point:

From *Define the starting point of the arc.*

Radius *Define the radius.*

To *Define the arc end point.*

Construction Arc Parallel:

The parallel arc gets a different radius from that of the original arc.

Before calling up the function you can select a different line type for the parallel arc.

Arc	*Click the original arc.*
Distance	*Enter the distance between the original arc and the parallel arc.* A positive value places the parallel arc on the outside of the original arc, (i.e. the parallel arc will have a greater radius). A negative value places the parallel arc on the inside of the original arc (i.e. the parallel arc will have a smaller radius).

Construction Circle:

The radius of the circle which was last designed can be transferred to all following circles by pressing the *[Return]* key in answer to the query **Radius (zad),** (i.e. **zad** means that the system saves the entered value).

Centre	*Define the centre of the circle.*
Radius (zad)	*Enter the radius.*

Construction Fillet (Round):

With this function you round two elements which have a real or imaginary intersection point.

You can use the function for lines, circles and arcs.

Element?	*Click the first element.*
Element?	*Click the second element.*
Radius (zad)	*Enter the radius of the arc to be rounded.*

Change Line Attributes:

This function allows you to modify multiple features (attributes) of an element all at once.

Select this function and a pop-up-window with a selection of seven different attributes that can be changed will be displayed, such as **Line Type**, **Number of Bridges**, **Length of Bridges**, **Pointage**, **Aux. Typ**, **Thickness of Text and Height of Text..**

(Just select and click the desired type to change the line type.)

All other attributes can be changed in various ways:

- *click the square button in front of the attribute,*

  then

- *specify the desired value in the scroll display of the scale.*

  Position the mouse pointer in the black field, press the left mouse button and drag the pointer to the desired location in the field. Release the mouse button and the selected value appears to the right of the respective attribute.

  or

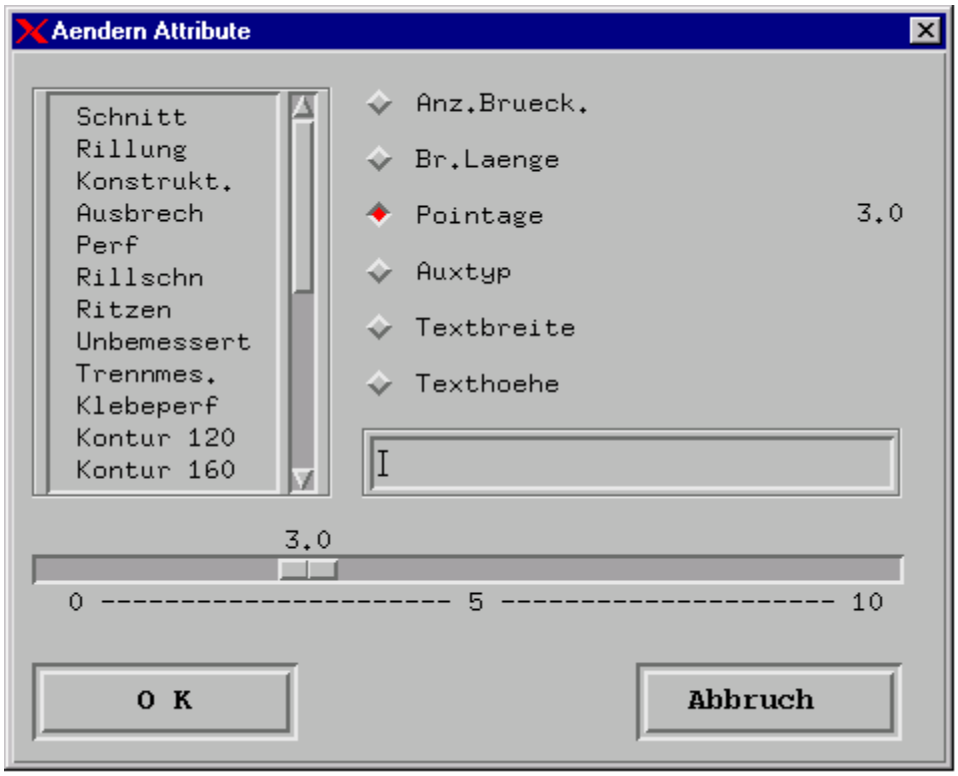
- *enter the selected value by keyboard*

  For the attributes **Number of Bridges**, **Length of Bridges,** and **Pointage** the value **auto** or **AUTO** can be entered thereby allocating the values pre-programmed by the system to the respective elements.
  The value appears in the text box below the attributes. Also, this value will appear to the right of the selected attribute after having confirmed the entry by pressing *[Return]* .

Click **OK** and the pop-up-window will disappear. The system will ask you:

Element ? *Click the element you want to change according to the entries in the pop-up window.*

You can cancel the function at any time by pressing the middle button of the mouse.



Manipulation Extend:

Parallel lines cannot be extended because they do not have a common intersection point.

Existing border elements are:

a. Line – Line

Element *Click the line to be extended.*

Element *Click the border line.*

b. Line – Arc

Element *Click the line to be extended.*

Element *Click the bordering arc or circle.*

b. Arc – Arc

Element *Click the arc you want to extend.*

Element *Click the bordering arc or circle.*

b. Arc – Line

Element *Click the arc you want to extend.*

Element *Click the border line.*

Delete Element:

Element *Click the element that you want to delete.*

Delete Sector:

This function allows you to delete a sector defined by two points.

Use this function for

a: a line

Sector	*Click the sector of a line that you want to delete*
Point	*Click the first border point*
Point	*Click the second border point*

b: an arc

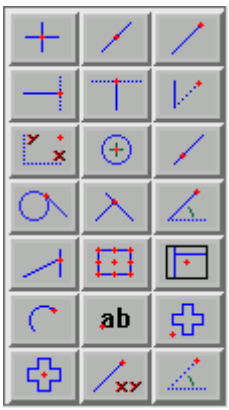
Sector	*Click the sector of an arc that you want to delete.*
Point	*Click the first border point*
Point	*Click the second border point*

c: a circle

Sector	*Click the sector of a circle that you want to delete*
Point	*Click the first border point*
Point	*Click the second border point*

Definition of points

If you call up a command in DIECAD the toolbar on the left side of the screen will disappear in most cases. It is replaced by a collection of buttons for the definition of points. This window will remain active until you cancel the called up command by clicking on the middle key of your mouse. When calling up a command the following selection will appear on the left side of your screen:



(You can automatically access the respective help function by clicking the appropriate buttons in the toolbox)

Intersection point:

Take over of the real or imaginary intersection point by clicking two elements.

Center Point:

Take over of the center point of an element by clicking on it.

End Point:

Take over of the starting or end point of an element by clicking on it. Hereby, the point which is located nearest the clicked position is taken over.

Horizontal projection:

The point defined in this way is the – perhaps only imaginary - intersection point between the horizontal projection line calculated from the current cursor position and the clicked element.

Vertical Projection:

The point defined in this way is the – perhaps only imaginary – intersection point between the vertical projection line calculated from the current cursor position and any clicked element.

Indirect:

With this option a point is defined by a specified displacement in x- and y- direction starting from a reference point.

X(p1) Y(p2):

Point definition by using the x-coordinate of the first picked element and the y-coordinate of the second picked element.

Center:

Take over of the central point of an arc or circle by clicking on it.

Nearest point on an Element:

The position on an element which is nearest to the clicked position is defined as point.

Tangent to...:

This option should be used primarily for defining an end point. The point defined with this option is the contact point which would be created by putting a tangent to an arc or circle from the starting point.

Perpendicular Line:

Take over of the point where the perpendicular meets an element.
Let the perpendicular fall from the current cursor position on to the picked element.

Angle:

Starting from the current cursor position a point is defined using an angle and an absolute or relative x- or y- coordinate.

Angle to..:

Definition of a point using an element and an angle. The defined point is the – perhaps only imaginary – intersection point between the clicked element and the imaginary line derived from the angle entered and starting from the current cursor position.

Area:

With this option one out of eight outer bordering points or the centre point of a section (e.g. bottom left, centre left, top left and so on) can be taken over as a point.

Center of a Screen Section

Take over of the center of a any screen section.

Arc:

Take over of the outermost point of an arc or circle which is located nearest the clicked position. The outermost point is calculated according to an imaginary coordinate system whose origin is the center of the arc or circle.

Text:

Take over of the bottom left point of a text irrespectable of how the text was originally justified.

Origin:

The origin point of the selected blank is taken over.

Centre Blank:

The center point of the selected blank is taken over.

XY:

Definition of a point by entering the absolute x- and y-coordinate.

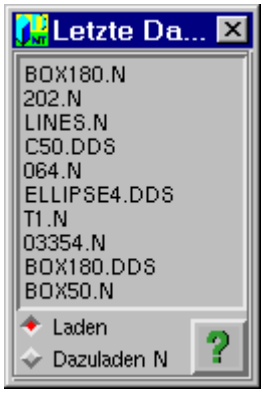
Indirect Length:Angle:

Definition of a point using a specified angle and a specified distance from an already existing element.

DIECAD NT Version 10.1

Toolbox for rapid loading of the last used files

A window will appear containing a list of the 10 files last loaded:



As soon as you select a file it is loaded instantly. If the variable **qchnmess** is set to 1 and you have made changes to the current file the system will tell you that the current file has not been saved yet so that you can do this now.

The file last used is always on top of the list. As soon as you load a new file the positions on the list go down one place and the tenth line disappears alltogether.

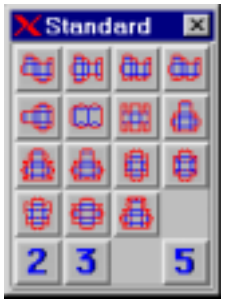
The standard check box below the list is set to „load“ but you can also add a file to the list by first clicking “Add N” and then selecting an N-file. This not yet possible with DDS-Files.

Own Standards

Here you can enter 5 optional standards. Enter these without a path name or data file extension.

Click **OK** and the defined customized standards are saved.

Your own standards are now defined and will appear from now on in the standard toolbox. The respective tool tips are also displayed when you move the mouse over it.

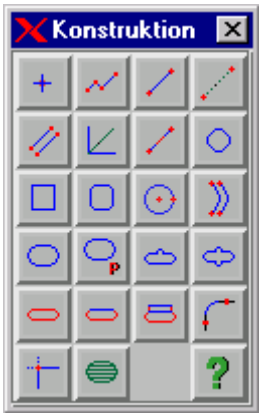


Click a button and the respective standard is executed.

Construction

To access “Construction“ in the toolbox click this button in the toolbar:

The following window is displayed:



(You can automatically access the respective help function by clicking the appropriate buttons in the toolbox)

Construction from:

The position on which the cursor is at any given moment on your screen is called the **current cursor position**.

This position is identified on your screen by a small green arrow.

After having called up the function a point can be placed at any position thereby also changing the current cursor position.

The following query is displayed as a message:

From

Now, you can define a point.

Construction Line:

For this function you have to define the starting and end point for the first line only. For all following lines only the respective end point is defined.

From	*Define the starting point of the line.*
To	*Define the end point of the line.*
To	*Define the end point of the following line, etc.*

Construction Line from to:

With this function you have to define the starting and end point for every subsequent line.

From	*Define the starting point of the line.*
To	*Define the end point of the line.*
From	*Define the starting point of the following line.*
To	*Define the end point of this line, etc.*

Construction Line free:

With this function a line can be drawn whose starting and end point are connected with a so-called “rubber band”, i.e. a dashed line.

The starting point can be defined by means of point definition. The end point can also be defined by pressing the left mouse key after the cursor has been placed to the selected position.

This function is especially useful when designing the upper stripper board.

From	*Define the starting point of the line.*
To	*Define the end point of the line.*

Linie Parallel:

In contrast to the functions **Line parallel in x** and **Line parallel in y** The lines designed with this function do not align flush with the direction of the axes.

The parallel line has the currenctly selected line type.

In contrast to the functions **Line Parallel Multiple**, **Line Parallel in x** and **Line parallel in y** this function allows you to draw parallel lines to several different original lines.

Line	*Cick the original line.*
Distance	*Enter the distance between the original line and the parallel line to be drawn..* Note: A positive value places the parallels above, a negative value below the original line. For vertical lines, a positive value places the parallels on the right side of the original line and a negative value on the left side of it.
Line	*Cick the next line to which you want to draw a parallel line.*

Bisectional Angle:

Element?	*Click one of the two intersecting line.*
Element?	*Click the second line.*
Length of the Construct.-Line	*Enter the length of the construction line.*

Construction Segments:

The angle of the entire cutting and creasing line is determined by the definition of its starting and end point.

From	*Define the starting point of the first segment.*
To	*Define the end point of the last segment.*
Segments	*Enter the number of segments.*

Please note that the first segment always consists of a creasing line.

Construction Rectangle:

From	*Define the centre of the rectangle.*
Angle (0)	*Enter the angle of inclination of the rectangle.*
Width	*Enter the **width** of the rectangle.*
Height	*Enter the **height** of the rectangle.*

Construction Rectangle with round corners:

From	*Define the centre of the rectangle.*
Angle (0)	*Enter the angle of inclination of the rectangle.*
Width	*Enter the **width** of the rectangle.*
Height	*Enter the **height** of the rectangle.*
Radius	*Enter the radius of the round corner.*

Construction Circle:

The radius of the circle which was last designed can be transferred to all following circles by pressing the *[Return]* key in answer to the query **Radius (zad),** (i.e. **zad** means that the system saves the entered value).

Centre	*Define the centre of the circle.*
Radius (zad)	*Enter the radius .*

Construction Arc Parallel:

The parallel arc gets a different radius from that of the original arc.

Before calling up the function you can select a different line type for the parallel arc.

Arc	*Cick the original arc.*
Distance	*Enter the distance between the original arc and the parallel arc.* A positive value places the parallel arc on the outside of the original arc, (i.e. the parallel arc will have a greater radius). A negative value places the parallel arc on the inside of the original arc (i.e. the parallel arc will have a smaller radius).

Construction Ellipse:

The ellipse created with this function is maintained as **one single** geometric element in the **DIECAD NT** – data file structure. It is not always possible to manipulate true ellipses (e.g. create an intersection with other geometric elements).

Centre	*Define the centre of the ellipse.*
Main axis	*Enter the overall length of the main axis.*
Minor axis	*Enter the overall length of the minor axis.*
Angle	*Enter the angle of inclination of the ellipse.*

Construction Ellipse P:

Ellipse P is an ellipse consisting of several arcs.

The radii and centres of the arcs are calculated automatically by the systemn. You can apply all features for manipulating arcs for this type of ellipse. (Each arc is treated as a single element).

Centre	*Define the centre of the ellipse*
Main axis	*Enter the overall length of the main axis.*
Minor axis	*Enter the overall length of the minor axis.*
Angle	*Enter the angle of inclination of the ellipse.*
Arcs – 16, 24, 36?	*Enter the number of arcs.* The required bridge is placed on the point of intersection of the arc of the ellipse with the minor axis.
Alternating Linen types (Yes)	When you confirm this query the ellipse is displayed in alternating line types (cut/ perforation). This is useful for finishing your ellipse at a later point.

Construction Eurohole:

From	*Define the centre of the Eurohole*
Angle (0)	*Enter the angle of inclination of the Eurohole.*
Length	*Enter the length of the Eurohole.*
Width	*Enter the height of the Eurohole.*
Distance C:	*Enter the distance from the upper edge of the Eurohole to the start of the rounded suspension arc.*

Construction Eurohole Special:

From	*Definie the centre of the Eurohole.*
Angle (0)	*Enter the angle of inclination of the Eurohole.*
Length	*Enter the length of the Eurohole.*
Width	*Enter the height of the Eurohole.*
Distance C:	*Enter the distance from the upper edge of the Eurohole to the start of the rounded suspension arc.*

Construction Finger hole:

From	*Define the centre of the finger hole.*
Angle (0)	*Enter the angle of inclination of the finger hole.*
Length	*Enter the length of the finger hole.*
Width	*Enter the height of the finger hole.*

Construction Finger Hole with Crease Insert:

From	*Define the centre of the finger hole.*
Angle (0)	*Enter the angle of inclination of the finger hole.*
Length	*Enter the length of the finger hole.*
Width	*Enter the height of the finger hole.*

Construction Gripping Hole:

From	*Define the centre of the gripping hole.*
Angle (0)	*Enter the angle of inclination of the gripping hole.*
Length	*Enter the length of the gripping hole.*
Width	*Enter the height of the gripping hole.*
Distance DR	*Enter the distance between the two creasing lines.*

Construction Fillet (Round):

With this function you round two elements which have a real or imaginary intersection point.

You can use the function for lines, circles and arcs.

Element?	*Click the first element.*
Element?	*Click the second element.*
Radius (zad)	*Enter the radius of the arc to be rounded.*

Construction Intersection Point:

With this function two elements can be lengthened as well as shortened to their common (imaginary) point of intersection.

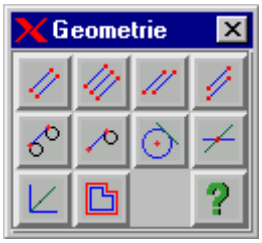
The extension or reduction in length depends on which element you click first as well as on which end of the element you click.

L1	*Click the first element.*
L2	*Click the second element.*

Geometry

To access „Geometry“ in the toolbox click this button in the toolbar:

The following window is displayed:



(You can automatically access the respective help functions by clicking the appropriate buttons in the toolbox)

Parallel Line:

As opposed to the functions **Line parallel in x** und **Line parallel in y** the lines designed with the above function do not align flush with the direction of the axis.

The parallel line has the currently selected linetype.

As opposed to the functions **Line Parallel Multiples**, **Line parallel in x** and **Line parallel in y** this function allows you to draw multiple parallel lines to various baselines.

Line	*Click the baseline*
Distance	*Enter the distance between baseline and the parallel line to be drawn* Note: A positive value places the parallel line above the baseline, a negative value below. Vertical lines with positive values are placed on the right side of the vertical baseline, with negative values on the left side.
Line	*Click the next line to which you want to draw a parallel line.*

Line Parallel Multiple:

As opposed to the functions **Line parallel in x** and **Line parallel in y** the lines designed with the above function do not align flush with the direction of the axis.

The parallel line has the currently selected linetype.

The distance between the parallels is calculated each time from the parallel line which was last drawn.

Line	*Click the baseline*
Distance:	*Enter the distance between the baseline and the parallel line to be drawn* The same rules as for the function **Parallel Line** apply for positive and negative values.
Distance	*Enter the distancee between the last drawn parallel and the following parallel*

Line Parallel in x:

This function is mainly used for 3-dimensional drawings.

As opposed to the functions **Parall Line and Line Parallel Multiple** the parallels drawn with this function align flush in x-direction.

The parallel lines have the currently selected linetype.

The previously mentioned rules apply for positive and negative values.

Line	*Click the baseline*
Distance	*Enter the distance between the baseline and the parallel*
Distance	*Enter the distance between the last parallel and the following parallel line.*

Line Parallel in y:

This function is mainly used for 3-dimensional drawings.

As opposed to the functions **Parallel Line and Line Parallel Multiple** the parallels drawn with this function align flush in y-direction.

The parallel lines have the currently selected linetype.

The above mentioned rules apply for all positive and negative values.

Line	*Click the baseline*
Distance	*Enter the distance between the baseline and the parallel line.*
Distance	*Enter the distance between the last parallel and the following parall.*

Tangent between Two Arcs/Circles:

The tangent starts/ends as near to the clicked position as possible.

a. Between two arcs

circle	*click the first arc*
circle	*click the second arc*

b. Between an arc and a circle

circle	*click the arc*
circle	*click the circle*

c. Between two circles

circle	*click the first circle*
circle	*click the second circle*

Tangent from a Point to an Arc/Circle:

The tangent starts as near to the clicked position as possible.

a. From a point to an arc

arc	*click the arc to which you want to attach the tangent*
to	*define the point from where you want to start the tangent*

b. From a point to a circle

arc	*click the circle to which you want to attach the tangent.*
to	*define the point from where you want to start the tangent*

Tangent Angle / Length:

Construction line which is tangentially applied to an **Arc or Circle**.

The center point of the line touches the arc or circle. The position of the line is determined by the clicked point on the arc/circle and the angle of inclination of the line.

Arc	*Click the arc or circle*
Angle	*Enter the angle of inclination of the construction line*
Length of the construction line	*Enter the length of the construction line*

Line Angle / Length:

Construction line which intersects a **Line.**

The intersecting point of the baseline is also the centerpoint of the construction line.

Intersecting point	*Define the intersecting point of the construction line on the baseline*
Angle	*Enter the angle of inclination of the construction line*
Length of the construction line	*Enter the length of the construction line*

Bisectional Angle:

Element?	*Click one of the two intersecting lines*
Element?	*Cick the second line*
Length of the construction line	*Click the length of the construction line*

Contour:

This function is suitable for creating a mask for the step and repeat machine to cover up those surfaces which should not be exposed.

It is also suitable with certain restrictions for creating stripping boards.

A contour can be made:

a. around a section / blank

for a **section** use this function on the third section level, for a **blank** select the second level.

Type? When you click this query the following options will appear in a frame on the left of the screen: **Section** and F**rame**. *Click **Section**.*

Section element? *Click an element of the respective section/blank and go to a different level, if needed.*

Offset - *Enter the distance between the contour and the outline of the design*

A positive value places the contour outside the closed cutting line, a negative value inside.

Round off edges of the stripping board (Yes) *Confirm or negate it*

a. around a blank layout or among individual blanks in a blank layout

For this case the respective part is framed.

Prior to calling up this function a new section should be opened on the second section level (/D1, /D2 etc.).

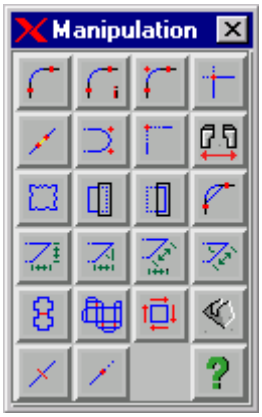
Select linetype **stripping** if you want a stripping board.

Type?	With this query the following options are displayed in a frame on the left of the screen: **Section** and F**rame.** *Click the frame.*
Screen section below left	*Define the lower left corner point of the frame.*
Screen section above right	*Define the upper right corner point of the frame.*
Lines inside frame (Yes)	*Confirm if all lines are inside the frame*
Offset -	*Enter the distance between the contour and the outline of the design* A positive value places the contour outside the closed cutting line, a negative value inside.
Round off edges of the stripping board (Yes)	*Confirm or negate it*

Manipulation

To access “Manipulation“ in the toolbox click this button in the toolbar:

The following window is displayed:



(You can automatically access the respective help function by clicking the appropriate buttons in the toolbox)

Manipulation Fillet (Round):

With this function you can round out two elements which have a real or imaginary intersection point.

Use this function with lines, circles and arcs.

Element?	*Click the first element.*
Element?	*Click the second element.*
Radius (zad)	*Enter the radius of the arc to be rounded.*

Manipulation Fillet Interactive:

With this function you can round two lines which have a real or imaginary intersection point. You can only use this function with lines.

After you have clicked both elements a dashed contour line of the arc is displayed by moving your mouse and you can then drag the arc to the required position.

Element?	*Click the first element.*
Element?	*Click the second element.*
Through Point	*Define the through point.*

Manipulation Fillet Intersection:

Intersec.	*Click the point of intersection between two elements.*
Through point	*Define the through point.*

Manipulation Intersection Point:

With this function two elements can be lengthened as well as shortened to the (virtual) point of intersection.

The extension or reduction in length depends on which element you click first as well as on which end of the element you click.

L1	*Click the first element.*
L2	*Click the second element.*

Manipulation Gap:

With this function you can replace the line type of a line sector with a different line type.

The extension or reduction in length depends on which element you click first as well as on which end of the element you click.

Line type	When you see this query a scroll window will also appear on the left of your screen in which the various line types are displayed. *Select the new line type.*
Line	*Click the line of which you want to replace a sector with a different line type.*
Point	*Define the starting point of the line sector you want to replace.*
Point	*Define the end point of the line sector you want to replace.*

Manipulation Round:

With this function you can connect two lines which are not intersecting with an arc.

You can use this function only for lines. It is frequently used for parallel lines.

Element *Click the first line.*

Element *Click the second line.*

Manipulation Extend:

Parallel lines cannot be extended because they do not have a common intersection point.

Existing border elements are:

a. Line – Line

Element *Click the line to be extended.*

Element *Click the border line.*

b. Line – Arc

Element *Click the line to be extended.*

Element *Click the bordering arc or circle.*

b. Arc – Arc

Element *Click the arc you want to extend.*

Element *Click the bordering arc or circle.*

b. Arc – Line

Element *Click the arc you want to extend.*

Element *Click the border line.*

Manipulation Flexible Bridges:

With this function you can place bridges with given lengths at any position of your choice.

Bridges are only visible after you have clicked the icon **Bridges on/off.**

Length	*Enter the length of the bridge*
Element	*Click the element on which you want to place the bridge.*
Point	*Define the center point of the bridge.*

Manipulation Smoothing:

You can use this function to create a tangential transition of two elements.

The angle between these two elements must not be more than 5 degrees.

This function is mainly used for re-finishing contoured designs.

Element *Click the first element.*

Element *Click the second element.*

Manipulation Clip-IN:

With this function all elements all elements positioned within a frame can be cut out.

Every line is cut off at the exact point where the frame is.

Only those blanks in a blank lay-out are deleted which are completely within the frame.

Ellipses are first divided into separate arcs and then those parts which are framed are deleted.

Please note that with this function the left mouse key **cannot** be used for defining the screen section.

Screen Section bottom left	*Define the lower left corner point of the frame.*
Screen Section top right	*Define the top right corner point of the frame.*

Manipulation Clip-OUT:

With this function all elements which are outside of a defined frame are cut out.

Every line is cut off at the exact point where the frame is.

Only those blanks in a blank lay-out are deleted which are completely outside of the defined frame.

Ellipses are first divided into separate arcs and then those parts which are not framed are deleted.

Please note that with this function the left mouse key **cannot** be used for defining the screen section.

Screen Section bottom left	*Define the lower left corner point of the frame.*
Screen Section top right	*Define the top right corner point of the frame.*

Manipulation Corner Cut:

With this function two intersecting lines are rounded by an arc.

An additional straight connecting line is drawn.

You can use this function for lines, circles and arcs.

Element	*Click the first line.*
Element	*Click the second line.*
Radius (zad)	*Enter the radius of the rounding arc.*

Manipulation Chamfer Distance/Distance:

The chamfer line runs at a certain distance from the intersection point of two elements.

If the intersection point is only imaginary the two elements are extended to their real intersection point and then chamfered.

The chamfer line will be of the line type which was selected for the last clicked element.

Element	*Click the first element.*
Element	*Click the second element.*
Distance	*Enter the distance from of the intersection point of both elements to the new end point of the element you first clicked.*
Distance	*Enter the distance from the intersection point of both elelments to the new end point of the second element you clicked.*

Manipulation Chamfer Distance/Angle:

The chamfer line runs at a certain distance from the intersection point of the two elements as well as at a certain angle.

If the intersection point is only imaginary the two elements are extended to their real intersection point and then chamfered.

The chamfer line will be of the line type which was selected for the last clicked element.

Element	*Click the first element.*
Element	*Click the second element.*
Distance	*Enter the distance from the intersection point of both elements to the new end point of the element you clicked first.*
Angle	*Enter the angle of the chamfer line.*

Manipulation Chamfer Distance/Length:

The chamfer line runs at a certain distance from the intersection point of the two elements as well as at a certain angle.

If the intersection point is only imaginary the two elements are extended to their real intersection point and then chamfered.

The chamfer line will be of the line type which was selected for the last clicked element.

Element	*Click the first element.*
Element	*Click the second element.*
Distance	*Enter the distance from the intersection point of the two elements to the new end point of the element first clicked.*
Length	*Enter the length of the chamfer line.*

Manipulation Chamfer Angle/Length:

The chamfer line has a certain length and runs at a certain angle. The last line you click is the reference element for calculating the specified angle.

If the intersection point is only imaginary the two elements are extended to their real intersection point and then chamfered.

The chamfer line will be of the line type selected for the last clicked element.

Element	*Click the first element.*
Element	*Click the second element.*
Length	*Enter the length of the chamfer line.*
Angle	*Enter the angle of the chamfer line.*

Manipulation Duplicate Elements Layout:

With this function cutting lines positioned on top of each other as a result of bordering blanks are automatically replaced by one single cutting line thereby maintaining all required bridges.

New lines are created which are in a separate section.

Manipulation Duplicate Elements Block:

This function is used with lines of the same type which are on top of each other or butting against each other. When two lines are superimposed the shorter line is deleted and if required, a new line is created;
If two lines clash both are deleted and replaced by a new one.

You can use this function to check if duplicate designs were made and it is especially useful for blanks without magazine slots. It avoids the need for re-setting the knives or lasers when cutting continuously.

Use this function on the second level (/D1) and you can answer the queries so that it will take effect only within one section or in more than one section or in both ways.

Section Element?	*Enter a "slash" (/).*
Name of Section: (/D1)	The system displays a section on the second level. *Confirm it.*
Line Combination within a section (YES)	*Confirm if the respective lines are in the same section.* *Negate if you want to avoid that the function takes effect within the sections.*

Line Combination in several sections (N.)

Confirm if you want to avoid that the function takes effect in more than section.

*Click **YES** if the respective lines belong to different sections.*

Manipulation Line Sequence:

This function automatically changes the cutting direction of the cutting lines with the effect that there is no cutting into the design but only into waste when making samples with your plotter.

The system automatically checks if lines must be split and cut from the end points to the center points.

You can view the changed cutting direction on the screen by calling up macro „**cturn**“. Cutting lines are displayed in yellow. The cutting direction is indicated by arrows.

The message concerning the changed lines refers only to the display of the cutting lines as dimension lines.

Spilt lines are not displayed as such by macro “**cturn**“.

You can still change the cutting direction by clicking next to the arrowheads of single cutting lines.

Press the middle mouse key to return to your initial design. The system will have saved the changed cutting direction.

Please note that when transmitting data of the sample to the plotter the query **Sequencing** must be answered with **NO** to ensure that the split lines are processed in the intended way.

Manipulation Counter plate:

When calling up this function a counter plate is automatically created for the blank (standard) which is displayed on the screen.

Manipulation Line Division:

With this function you can divide a line in the middle.

This division is not shown on the screen.

Element *Click the line you want to divide.*

Manipulation Shorten:

With this function you can shorten a line.

Element	*Click on that side of the element which you want to shorten.*
Distance	*Enter the length by which you want to shorten the element.*

Move

To access “Move“ in the toolbox click this button in the toolbar:

The following window is displayed:

(You can automatically access the respective help function by clicking the appropriate buttons in the toolbox)

Move Points in Frame:

Elements which contain these points are also moved. You can elongate or shorten elements with this function.

Already existing dimensions are updated when you position a frame over these dimensions.

Screen section bottom left	*Define the lower left corner point of the frame*
Screen section top right	*Define the top right corner point of the frame*
Moving	*Enter the displacement*

Move Points in Section:

Points which are not part of this section are not moved even if they are inside the selected frame.

This function also allows you to enlarge or minimize sections because separate parts of a section can be moved.

Section Element?	*Click an element of the section you want to move*
Screen section bottom left	*Define the bottom left corner point of the frame.*
Screen section top right	*Define the top right corner point of the frame.*
Moving	*Enter the displacement*

Move Point:

All elements attached to this point are also moved.

Point *Define the point that you want to move*

Moving *Enter the displacement*

Move a Point along a Line:

The angle of the line on which the point is moved will remain. All other elements in which this point is contained are also moved.

Point	*Define the point that you want to move*
To	*Define the endpoint of the line on which you want to move the point*
Distance	*Enter the distance between the original position of the point and the new position of the point that you want to move*

Move a Point in x- and y-Direction:

Allows you to move a point so that its x- and y-coordinates are identical with those of another point.

The elements which contain this point are also moved.

Point	*Define the point that you want to move*
To	*Define the point whose x- and y-coordinates you want to adopt*

Move a Point in x- or y-Direction:

Allows you to move a point so that its x- or y-coordinates are identical with those of another point.

Elements which contain this point are also moved.

Point *Click the point that you want to move*

Options **x** and **y** are displayed in a frame on the left of the screen

*Click **x** if you want to move the point in x-direction*

*Click **y** if you want to move the point in y-direction*

To *Define the point whose x or y coordinate you want to adopt by clicking*

Move Section:

As opposed to the functions **Move Points in Section** the function described here does not allow you to move parts of a section. Consequently neither enlargements nor reductions can be made.

Section Element?	*Click the element of the section that you want to move*
Rotation-Scaling Point	*Define the rotation point for scaling*
Angle (0)	*Enter the angle of rotation*
x-Scal.-Factor	*Enter the x-scaling factor*
y-Scal.-Factor	*Enter the y-scaling*
Moving	*Enter the displacement*

Move Mirror:

This function allows you to mirror a section around a clicked axis.

Section Element? *Click the line of the section around which you want to mirror the respective section*

Move Blank:

Blank Element?	*Click an element of a blank that you want to move*
Rotation-Scaling Point	*Define the rotation scaling point*
Angle (0)	*Enter the angle of rotation*
x-Scal.-Factor (1)	*Enter the x-scaling factor*
y-Scal.-Factor (1)	*Enter the y-scaling factor*
Moving	*Enter the displacement*

Move Blank Interactive:

As opposed to the function **Move Points in Section** the function described here does not allow you to move parts of a section. Consequently neither enlargements nor reductions can be made.

Blank Element? *Click the element of the blank that you want to move*

Now you can drag the blank to the required position by moving the mouse pointer accordingly.

Fix the position by pressing the left mouse key.

Move Blank in Frame Interactive:

Only those blanks which are completely inside the frame to be defined are moved.

Screen Section bottom left

Define the bottom left corner point of the sreen section

Screen Section top right

Define the top right corner point of the screen section

Rotation-Scaling Point

Define the rotation-scaling point of the selected screen section.

You can now drag the blank to the required position by moving the mouse pointer accordingly.

Fix this position by clicking the left mouse key.

Move Frame Interactive:

This function cannot be used for blank layouts.

Only those elements which are completely inside the defined frame are moved.

A new section is opened for the relocated screen section.

Name of Section:	*Enter the name of the section that you want to open*
Screen Section bottom left	*Define the bottom left corner point of the screen section.*
Screen Section top right	*Define the top right corner point of the screen section*
From	*Define a reference point for repositioning the defined screen section*
To	*Define a point to which the reference point specified under **From** should be moved.*

Move Section Interactive:

This function cannot be used for blank layouts.

Only those elements which are completely inside the defined frame are moved.

A new section is opened for the relocated screen section.

Section Element?	*Click the element of the section that you want to move*
From	*Define a reference point for repositioning the clicked section*
To	*Define a point to which the reference point specified under **From** should be moved*

Move Point Interactive:

You can move all elements attached to a point by clicking this point and moving the mouse pointer accordingly.

Point	*Click the point that you want to move*
To	*Define the new position of the point to be moved*

Move Endpoint Interactive:

Element	*Click the side of an element of which you want to move the endpoint*
New End	*Define the new target point.*

Copy

To access “Copy“ in the toolbox click this button in the toolbar:

The following window is displayed:

(You can automatically access the respective help function by clicking the appropriate buttons in the toolbox)

Copy Lines:

If required, create a new section on the selected level before calling up this function.

From	*Define a reference point for copying an element.*
To	*Define the point to which you want to copy the point you have specified under **From**.*
Angle	*Enter the angle of rotation of the copy.*
x-Scal. Factor (1)	*Enter the x-scaling factor of the copy.*
y-Scal. Factor (1)	*Enter the y-scaling factor of the copy.*
Element	*Click the element or on successive elements to be copied.*

Copy Section:

Before calling up this function a new section should be opened or the copy of the currently opened section will be added.

Section Element?	*Click the element of the section you want to copy.*
Origin	*Define a reference point for copying the clicked section.*
To	*Define the point to which you want to copy the point defined under **Origin**.*
Angle (0)	*Enter the angle of rotation of the copy.*
x-Scal. Factor (1)	*Enter the x-scaling factor of the copy.*
y-Scal. Factor (1)	*Enter the y-scaling factor of the copy.*

Copy Section Interactive:

Before calling up this function a new section should be opened or the copy of the currently opened section will be added.

Section Element?	*Click the element of the section you want to copy.*
From	*Define a reference point for copying the clicked section.*
To	*Define the point to which you want to copy the point you have specified under **From**.*

The **Copy-Interactive-Function** facilitates rapid copying and free positioning of designs. No prompting for angles and scalings.

If required, rotating and mirroring is still possible by using the arrow keys. Press them following the query **From.** They have the following effects:

Arrow up:

Rotates a design with the result that it now has an angle of 90°.
Press it more than once and the angle will be 180° and so on.

Arrow to the right:

Rotates a design with the result that it now has 0°.

Arrow down:

Mirrors a design about the x-axis.

Arrow to the left:

Mirrors a design about the y-axis.

Please note that mirroring must be made before rotating or the system will not accept the order for mirroring.

In general and for all interactive functions the following applies:
After answering the query **From** the arrow on the screen is connected to the thus defined point. If the cursor is moved the drawing is displayed in dashed lines at its original position and a green dashed contour line follows the movement of the mouse. You can now visibly drag the design to the required position.

Defining the second point i.e. the point to which the point defined under **From** is copied, has the effect that the position is locked to the selected place. An existing point can be defined by clicking on it with the left mouse button or in one of the other ways described in the manual, chapter 1 under **Point Definition**.

Please find further details for interactive copying functions in our manual listed under **GENERAL INSTRUCTIONS** on page II-13.

Copy XY:

Section Element?	*Click an element of the section you want to copy.*
From	*Define a reference point for copying the clicked section.*
To	*Define the second point.* Please note that with this function the points defined under **From** and **To** should have the same coordinates since the x and y pitches will be added to points defined under **From** .
Columns (x)	*Enter the number of copies to be made in x-direction. (Count the original design too)*
Rows (y)	*Enter the number of copies to be made in y-direction. (Count the original design too)*
x- Pitch	*Enter the distance between the copies in x-direction.*
y-Pitch	*Enter the distance between the copies in y-direction.*

Copy Blank Interactive:

Blank Element?	*Define the lower left corner point of the screen section.*
From	*Define a reference point for copying the clicked blank*
To	*Define the point to which you want to copy the point defined under **From**.*

Copy Blank In Frame Interactive:

Only those blanks which are completely within the frame to be defined are copied.

Screen Section bottom left.	*Define the lower left corner point of the screen section.*
Screen Section top right	*Define the top right corner point of the screen section*
From	*Define a reference point for copying the defined screen section.*
To	*Define the point to which you want to copy the point defined under **From**.*

Copy Frame

Only those elements are copied which are completely within the frame.

If required, open a new section on a level to be selected.

This function cannot be used for blank lay-outs.

Screen Section bottom left	*Define the lower left corner point of the frame.*
Screen Section top right	*Define the top right corner point of the frame.*
From	*Define a reference point for copying the defined screen section.*
To	*Define the point to which you want to copy the point defined under **From**.*
Angle (0)	*Enter the angle of rotation of the copy.*
x Scal.-Factor	*Enter the x-scaling factor of the copy.*
y Scal.-Factor	*Enter the y-scaling factor of the copy.*

Copy Frame Interactive

Only those elements are copied which are completely within the frame.

Open a new section for the copy of the screen section.

You cannot use this function for blank lay-outs.

Name of Section:	*Enter the name of the section to be opened.*
Screen Section bottom left	*Define the lower left corner point of the frame.*
Screen Section top right	*Define the top right corner point of the frame.*
From	*Define a reference point for copying the defined screen section.*
To	*Define the point to which you want to copy the point defined under **From**.*

Copy Radial

You can find a simplified type of this function in the macro **pcopy**: But there it is not possible to rotate each single copy individually as you can here.

Section Element?	*Click an element of the sectionen you want to copy.*
Rotation scaling point	*Define the rotation scaling point.*
Origin	*Define the center of the copying sequence.*
Number	*Enter the number of copies you want to make and count the initial design too.*
Radius	*Enter the radius of the copying sequence.*
Starting angle	*Enter the angle for the first copy.*
Repeat angle	*Enter the angle for all subsequent copies.*
1. Rotation	*Enter the starting angle of the copying sequence.*
Relative angle of rotation	*Enter the angle of rotation of each single copy.*

Copy Quadrant

The initial section, a quadrant is copied and mirrored in x- and y-direction.

You must not open a new section for the copies and reflections created with this function or the initial section will also be copied and will then exist in duplicate.

Section Element?	*Click an element of the section you want to copy.*
Origin	*Define the center of the copying sequence, i.e. the point around which the copies should be laid out.*

CHANGE

To access „Change“ in the toolbox click the following button in the toolbar:

The following window is displayed:

(You can automatically access the relevant help functions by clicking the appropriate buttons)

Change Line Attributes:

This function allows you to modify multiple features (attributes) of an element all at once.

Select this function and a pop-up-window with a selection of seven different attributes that can be changed will be displayed, such as **Line Type**, **Number of Bridges**, **Length of Bridges**, **Pointage**, **Aux. Typ**, **Thickness of Text and Height of Text..**

(Just select and click the desired type to change the line type.)

All other attributes can be changed in various ways:

- *click the square button in front of the attribute,*
- then
- *specify the desired value in the scroll display of the scale.*

  Position the mouse pointer in the black field, press the left mouse button and drag the pointer to the desired location in the field. Release the mouse button and the selected value appears to the right of the respective attribute.

  or

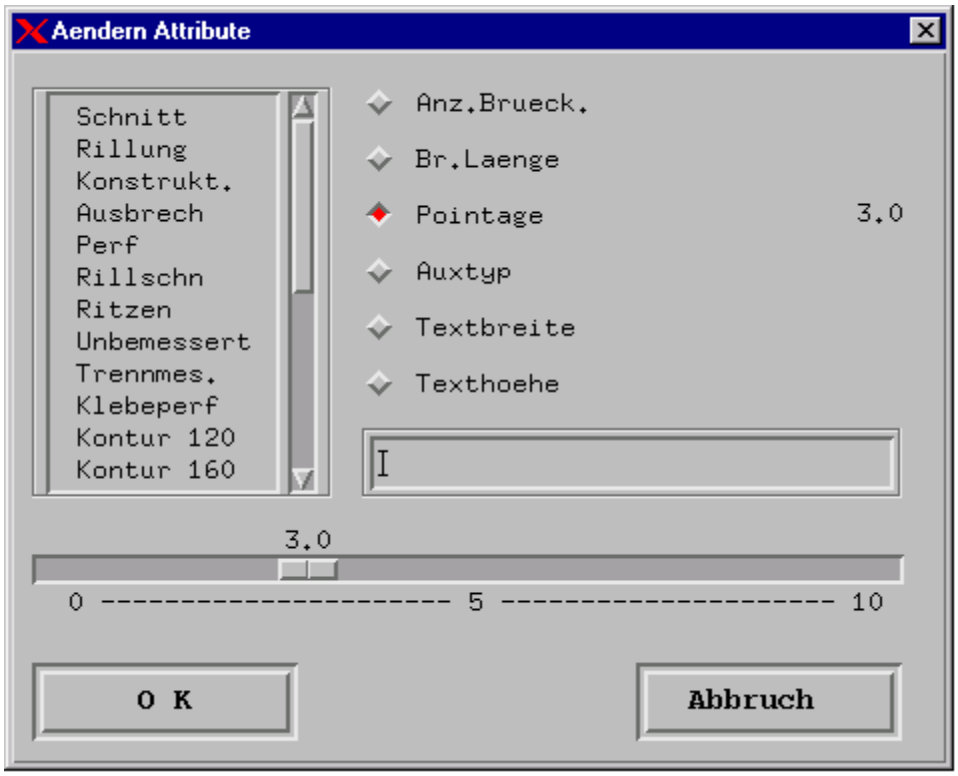
- *enter the selected value by keyboard*

  For the attributes **Number of Bridges**, **Length of Bridges,** and **Pointage** the value **auto** or **AUTO** can be entered thereby allocating the values pre-programmed by the system to the respective elements.
  The value appears in the text box below the attributes. Also, this value will appear to the right of the selected attribute after having confirmed the entry by pressing *[Return]* .

Click **OK** and the pop-up-window will disappear. The system will ask you:

Element ? *Click the element you want to change according to the entries in the pop-up window.*

You can cancel the function at any time by pressing the middle button of the mouse.



Change All:

With this function you can change multiple elements with defined features (attributes) all at once, e.g. **all** lines of a certain linetyp, **all** elements which contain a set number of bridges, etc.

The function affects the currently active and **opened section**. When the elements you want to change are located in more than one section you should go to the appropriate higher level before you access the function.

After you have called up the function the following pop-up-window will appear:

Mark the attributes you want to change on the left. These are listed according to the following features:

- line types (top,left): e.g. cutting, creasing,...
- geometric properties (top,right): e.g. bend, line,...
- additional properties: e.g. pointage, radius...

Define the newly selected attributes on the right.

Click the **OK** button and a confirmation window (information) will appear.

Now, all changes are made and displayed automatically.

Change File Name:

This function lets you rename .S-files.

If you save these files as part of your .N-data files the original .S-file will be retained and also saved under the new file name.

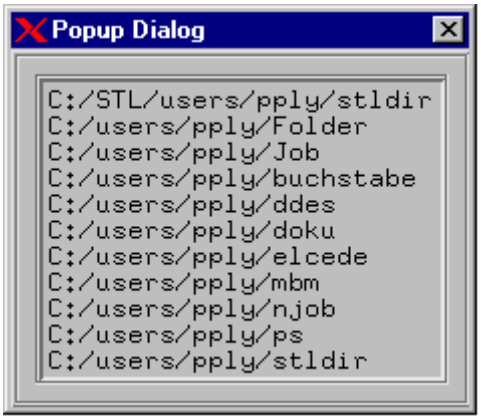
When you open the saved .N-file again the renamed .S-file is automatically loaded.

This function can only be used for single blanks and must be made on the second section level.

Section element?	*click the element of the blank of which you want to change the file name and go to the second level.*
File name	*enter the new file name.*

Change Path:

When you click the button “path“ the following pop-up-window appears:



Select the desired directory to which you want to change.

Change Number of Bridges:

This function lets you change the number of bridges per element which were automatically generated by the system according to the length of a given element.

To make bridges visible click the button **bridges**.

Bridges *enter the desired number of bridges.*

Element *click the element of which the number of bridges should be changed.*

Change Length of Bridges:

The length of the bridges provided by the system is 5 mm. You can change it with this function.

If there are no bridges assigned to the element you can assign them with the above function.

Length *enter the desired lengths of the bridges.*

Element *click the respective element*

Change Line type:

When you access this function the various line types will appear in a scroll window on the left side of the screen.

Type ? *click the new line type.*

Element *click the element you want to modify.*

Change Pointage:

The current pointage is displayed by clicking the button **Pointage** in the **display** toolbox.

Some common pointage dimensions are:

2 points	=	a width of	0,71 mm or 0,023 inches
3 points			1,06 mm or 0,042 inches
4 points			1,41 mm or 0,056 inches

Pointage *specifiy and enter the desired pointage in point units (e.g. 3).*

Element *click the element of which you want to change the pointage.*

Change Aux-type:

You can also change from one Auxiliary Line Type to a different Auxiliary Line Type.

The individual parts of an Auxiliary Line Type are not visible on the screen. Auxiliary Line Types are evaluated by ELCEDE machines only during processing.

Please find more detailed information about Auxiliary Line Types in our manual, chapter IV.

Aux.type *enter the desired number of the Auxiliary Line Type.*

Element *click the line you want to change.*

Change Text Size:

Each part of the text entered by having pressed *[Return]* is considered a unit by the system. The function described here will always affect such a whole unit.

If you want to change the size of characters of one single word only, it is necessary to do this separately and beforehand.

Height	*enter the new height of characters.*
Width	*enter the new width of characters.*
Text	*click the text of which you want to change the size of the characters.*

Change Sequence:

The sub-sections of a section on the third or fourth level are processed according to a defined sequence.
This sequence can be changed with the function described here, i.e. you can define which section should be processed before or after another one.

If you want to change the size of the characters only for a single word you should do this separately and beforehand.

Section element? *click an element of the section of which you want to change the position in the processing sequence.*

Before? (YES) *confirm this to process the first section you clicked* ***before*** *the one you click afterwards.*

If you deny the section you clicked first will be processed ***after*** *the one you clicked afterwards.*

Section element? *Click an element of the section which you want to process* ***before*** *or* ***after*** *the section you clicked first.*

You can check the edited sequence by clicking on the button **section** in the **display** toolbox.

This function can be used to optimize the process for laser cutting.

Change Manual Sequencing:

This function lets you change the succession of blank processing within a lay-out of blanks which is set automatically by the system to suit your needs. The blanks are then numbered according to the sequence specified and clicked here.

Height of text correct? (YES)	*Confirm it or say no and enter the desired height of text.*
Width of text correct? (YES)	*Confirm it or say no and enter the desired thickness of text.*
Element?	*Click the element of a blank of which you want to change the position in the processing sequence.*

Change Section:

This function lets you transfer elements of a design from one section to another section:

Section Element? *click an element of a section of which you want to change the name or content or enter the name of a new, previously opened section.*

After you have confirmed the security inquiry the following options are displayed in a window to the left of the screen: **Element**, **Name** and **Frame.**

When you select **Element**:

Element *click the element you want to add to the currently open section.*

After you have finished with this function all elements clicked will be in the previously defined section.

When you select **Frame**:

The completed elements which are in the defined frame will be allocated to the previously specified section.

Screen section bottom left *define the bottom left corner point of the frame.*

Screen section top right *define the top right corner point of the frame.*

When you select **Name** :

Name of the section *enter the new name of the section and confirm by pressing [Return].*

Now, the previously specified section has the new section name.

Aux. Types

To access “Aux.Types” in the toolbox click this button in the toolbar:

The following window is displayed:

(You can automatically access the respective help functions by clicking the appropriate buttons in the toolbox)

Crease-Cut:

From	*Define the starting point of the overall length of the crease-cut line*
To	*Define the end point of the overall length of the crease-cut line*
Length of cut cu:	*Enter the length of the cutting line*
Length of crease cr:	*Enter the length of the creasing line*
Minimum distance d	*Enter the minimum length of the creasing lines at both ends of the total length of the crease-cut line.*

You can find a sample of application in the manual on II-107.

Crease-Cut 1:

Here, in contrast to the crease-cut created with the crease-cut line (see previous page) this creasing line is drawn continuously. The cutting line segments are placed on top of the creasing line. On the screen only the creasing line is visible.

From	*Define the starting point of the overall crease-cut line*
To	*Define the end point of the overall crease-cut line*
Length of cut cu:	*Enter the length of the cutting lines*
Length of crease cr:	*Enter the length of the creasing lines*
Minimum distance d	*Enter the minimum length of the creasing lines at both ends of the overall crease-cut line*

You can find a sample of application in the manual on II-108.

Crease-Cut 2:

This function changes an existing line into a crease-cut line.

The crease-cut line is defined by the length of the cutting line segments as well as the number of cutting line segments to be allocated to the whole combination.

Line	*Click the length of the line you want to convert into a crease-cut line*
Length of cut l:	*Enter the length of the cutting line segments*
Number n:	*Enter the number of cutting line segments required*

Crease-Cut 3:

This function changes an existing line into a crease-cut line.

The crease-cut line is defined by the length of the cutting line segments as well as the creasing line segments and also by the minimum length of the creasing line segments at both ends of the whole special line.

Line	*Click the line you want to convert into a crease-cut line*
Length of cut l:	*Enter the length of the cutting line segments*
Length of crease l:	*Enter the length of the creasing line segments*
Minimum distance d:	*Enter the minimum length of the creasing line segments at both ends of the special line*

Perforation:

This function changes an existing line into a perforation consisting of individual cutting line segments.

The perforation is defined by the length and the number of cutting line segments.

Line	*Click the line you want to convert into a perforation*
Length of cut l 1:	*Enter the length of the cutting line segments*
Number n:	*Enter the number of cutting line segments*

Perforation:

This function changes an existing line into a perforation consisting of individual cutting line segments.

The perforation is defined by the length as well as the distance of the cutting line segments from each other. In addition the minimum distance from the two outermost cutting line segments to the two ends of the line to be converted must also be defined.

Line	*Click the line you want to convert into a perforation*
Length of cut l 1:	*Enter the length of the cutting line segments*
Distance d:	*Enter the distances between the individual cutting line segments*
Minimum distance d 1:	*Enter the minimum distance from the cutting line segments to the ends of the line to be converted*

Crease-Perforation Line:

This function changes an existing line into a line consisting of crease and perforation segments.

The line combination is defined by the length and the number of perforation line segments.

Line	*Click the line you want to convert into a crease-perforation line*
Length of Scores l:	*Enter the length of the perforation line segments*
Number n:	*Enter the number of perforation line segment*

Crease-Score-Line:

This function changes an existing line into line consisting of crease- and score line segments.

The line combination is defined by the length of the creasing line segments and the length of the scoring line segments. Also, the minimum length of the two outermost creasing line segments must be defined.

Line	*Click the line you want to convert into a crease-score line*
Length of scores l:	*Enter the length of the score line segments*
Length of score l 1:	*Enter the length of the score line segments*
Minimum distance d:	*Enter the mimimum length of the creasing lines at both ends of the overall crease-score line*

Wave Line:

This function creates a wave line.

From	*Define the starting point of the wave line*
To	*Define the end point of the wave line*
Height	*Enter half the height of a wave*
X-pitch	*Enter half the height of a wave* This value will be adjusted by the system depending on the overall length of the wave line since the system always creates complete waves spread over the entire length.

Please find a sample of application in the manual on II 112.

Wave Line 1:

This function creates a wave line by clicking on a line.

Element	*Click the line which you want to change into a wave line*
Height	*Enter half the height of a wave*
X-pitch	*Enter half the length of a wave* This value will be adjusted by the system depending on the overall length of the wave line since the system always creates complete waves spread over the entire length.

Please find a sample of application in the manual on II 112.

Toothing:

This function creates a toothing profile.

For example, it can be used to cut cardboard with a tooth profile.

From	*Define the starting point of the toothed line*
To	*Define the end point of the toothed line*
Width	*Enter the width of the lower horizontal lines*
Height	*Enter the height of the vertical lines*
Distance	*Enter the width of the upper horizontal lines*
Distance x:	*Enter the length of the horizontal lines at the beginning of the notch profile*
Length x1:	*Enter the length of the horizontal lines at the end of the noth profile*

Please find a sample of application in the manual on II-113

Tear Perforation 1:

From	*Define the starting point of the tear perforation*
To	*Define the end point of the tear perforation.*
---	*Enter the length of the horizontal line segments of the tear perforation*
/	*Enter the length of the slanting line segments of the tear perforation*
tv	*Enter the angle of inclination of the slanting line segments.*

Please find a sample of application in the manual on II- 114.

Tear Perforation 2:

This function creates a tear perforation of the same type as described previously (see **Tear Perforation 1**), but with dual lines.

From	*Define the starting point of the tear perforation*
To	*Define the end point of the tear perforation*
---	*Enter the length of the horizontal line segments of the tear perforation*
l	*Enter the length of the slanting line segments of the tear perforation*
Angle tv:	*Enter the angle of inclination of the slanting line segments*
Distance d:	*Enter the distance between the two parallel straight line segments*

Tear Perforation 3:

This function creates a tear perforation by clicking a line.

Line	*Click the line you want to convert into a tear perforation.*
Height h:	*Enter the inside distance of the individual line segments .*
Length l:	*Enter the length of the line segments*

Please find a sample of application in the manual on II- 116.

SHOW

To access „Show“ in the toolbox click the following button in the toolbar:

The following window appears:

(You can automatically access the respective help functions by clicking the appropriate buttons in the toolbox)

Show TLength:

This option calculates the total length of all lines of a blank which are to be fitted with knives or of all blank positions as well as the area required for their knife-knives format.

The message appears as follows:

Total knife 1610	(Total length of all lines to be fitted with knives)
Kn → Kn. 210.5x190	(area)
(Yes)	

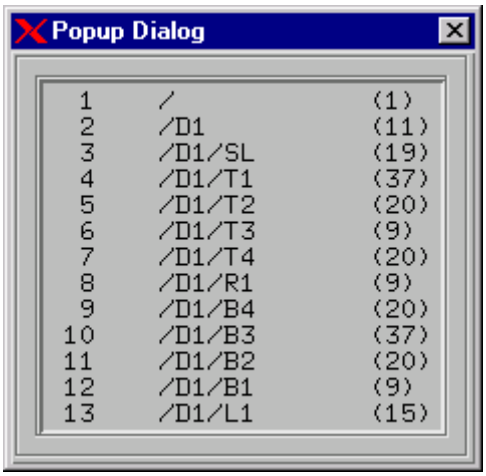
To exit this function press *[Return]* twice.

(A more convenient substitute for Tlength is the macro „LENCAL“)

Show Section:

When selecting this function the system will generate a Pop-Up-Window with a list of all sections of a blank.

Example:



The figures in brackets specifiy the number of subsections included in each section. When there are no subsections they specify the number of elements.

By clicking a section in the window you can activate it as current section as well as marking it or you can exit by pressing the middle mouse button.

Show Bridges:

This functon displays the number of bridges positioned on an element.

Element *click the respective element*

Show Linetype:

This option displays the linetype of the clicked element. Also, the number of the respective linetype is shown according to the list of **LINETYPES** (see this chapter).

Element *click the appropriate element.*

Show Length of Bridges:

This function displays the lengths of the bridges positioned on a single element.

Element *click the appropriate element*

Show Pointage:

Displays the pointage of a clicked element.

Element *click the respective element*

Show Text:

Displays the height and width of font characters of the clicked text.

Text *click the respective text*

Show Aux. Type:

This option displays the Auxiliary Line Type of an element.

Please find more detailed informationen of Auxiliary Line Types in chapter IV.

Element *click the respective element*

Show Element:

All elements of a section are numbered in sequence by the system and this option displays the allocated number of the element.

Element *click the respective element*

Show Direction:

Displays the rotating direction of an arc; -1 means one turn to the right (clockwise), 1 means a turn to the left (counter-clockwise).

Element *Click the respective element*

Show Gap:

This function allows you to check if the contour of a single blank is closed. An open position is then identified with a double cross and the open endpoints are marked with a single cross of the linetype “Stripping”.

Delete

To access “Delete“ in the toolbox click this button in the toolbar:

The following window is displayed:

(You can automatically access the respective help function by clicking the appropriate buttons in the toolbox)

Delete Element:

Element *Click the element that you want to delete*

Delete Text:

Text entered in one go by having called up the respective function once is considered **one** element by the system even if it consists of several words. Therefore, the entire text is deleted.

If you only want to delete a single word, it must have been entered separately and in advance.

Text *Click a letter of the text you want to delete.*

Delete Section:

Section Element?	*Click an element of the section you want to delete*
Correct Section (Yes)	*Confirm by pressing [Return] or select another section*
Draw (N.)	*Confirm by pressing [Return].*

Delete Blank:

Blank Element? *Click an element of the blank to be deleted*

Delete Sector:

This function allows you to delete a sector defined by two points.

Use this function for

a: a line

Sector	*Click the sector of a line that you want to delete*
Point	*Click the first border point*
Point	*Click the second border point*

b: an arc

Sector	*Click the sector of an arc that you want to delete.*
Point	*Click the first border point*
Point	*Click the second border point*

b: a circle

Sector	*Click the sector of a circle that you want to delete*
Point	*Click the first border point*
Point	*Click the second border point*

Delete Sector Interactive:

Sector *Click the sector of a line that you want to delete*

Delete Cut-Out Inside:

Only those blanks are deleted which are completely inside the frame.

The section in which you are is not important.

This function is only used for blank lay-outs.

Screen section bottom left	*Define the bottom left corner point of the frame*
Screen section top right	*Define the top right corner point of the frame.*

Delete Cut-Out Outside:

Only those blanks are deleted which are outside the frame.

This function is only used for blank lay-outs. It must be performed on the second section level.

Section Element?	*Enter “Slash“ (/).*
Name of section: (/D1)	The system reports a section on the second level (/D1). *Confirm*
Screen section bottom left	*Define the bottom left corner point of the frame*
Screen section top right	*Define the top right corner point of the frame*

Delete Blank Lay-Out:

Perform this function on the second level.

The original blank with which the lay-out was created will remain.

Section Element? *Enter “Slash“ (/).*

Name of section:
(/D1) The system reports a section on the second level (/D1). *Confirm*

.

Delete Empty Sections:

This function automatically deletes empty sections, i.e. sections which do not contain any elements at all.

The names of the deleted sections are shown in the entry dialog box below.

Delete All:

This function allows you to delete multiple elements with certain common features all at once, e.g. **all** lines of a certain line type, **all** elements which have a given number of bridges, etc.

Only elements of the currently active section are deleted. Select a higher section level if you want to delete elements from multiple sections.

When you call up this function the following question is displayed:

What do you want to delete?

and the following options are listed in a scroll down window on the left of the screen:

Nu.Br.	(means number of bridges)
Br. Length	(means length of bridges)
Pointage	
Linetype	
Sequence	
Element	
Text	
Sequence	
Blk. Seq.	(means blank sequencing)
Man. Seq.	
Aux. typ	
File name	

An example will illustrate how **all** crease lines of a blank are deleted.
In this case the function is performed on the second level.

What do you want to delete? *Click the selected option, in this case* ***Linetype****.*

Type? In the same scroll window the various line types are displayed. *Click the line type that you want to delete, in our case* ***Crease****.*

All creasing lines of the blank are now deleted.

If one or more (sub)-sections are completely emptied by this procedure, the system will ask:

Section ... is now empty! Delete (Yes)

Blank

To access “Blank“ in the toolbox click this button in the toolbar:

The following window is displayed:

(You can automatically access the respective help function by clicking the appropriate buttons in the toolbox)

Blank Single:

Blank Element?	*Click an element of the blank you want to copy*
Rotation-Scaling Point	*Define the rotation-scaling point*
Angle (0)	*Enter the angle of inclination for the blank that you want to copy*
x-Scal.-Factor (1)	*Enter the x-scaling factor*
y-Scal.-Factor (1)	*Enter the y-scaling factor*
Moving	*Enter the distance between the point of origin of the original blank and the point of origin of the blank copy*

Blank XY:

This function allows you to make multiple copies of a design. The copies are laid out in a grid of x- and y- directions.

Blank Element?	*Click the element of a design that you want to copy*
From	*Define a reference point fo copying (P1).*
To	*Define second reference point for copying (P2).*
	Please note that the points defined in **From** and **To** should have identical coordinates because the x- and y- pitches will be added to **P1**
Columns (x)	*Enter the required number of copies in x-direction*
Rows (y)	*Enter the required number of copies in y-direction*
x-Offset	*Enter the x pitch*
y-Offset	*Enter the y pitch.*

Blank Mirror:

You can also copy the mirrored blank with this function.

Fix the required position of the copied blank by defining the points under **From** and **To.** The point defined under **From** is copied to the point defined under **To**.

Blank Element?	*Click the element of the blank that you want to mirror and copy*
From	*Define a reference point to mirror and copy the blank (P1).*
To	*Define the point to which you want to copy point 1 (P2).*

Blank Blanklayout:

Multiple copies of a blank are made when designing a blank layout. Blanks generated by this method are placed in x- and y-directions.

Menu item **Manipul./Blank** includes four functions for creating a **Blank Layout: Blankto, Frame, Fill, T1B1.AUTO.** Functions **Manipul./Blank, Blankto** have additional subfunctions.

While you are working with functions **Manipul./Blank, Blankto** the following messages listed below will appear. Some of them give you numerous possibilities for extensive dialogs to lay out the blanks according to your individual requirements.

Automatic (Yes)
Optimize (N.)

(After the message Optimize (N.), select the type of nesting required (N.)

Count (N.)
Std flaps (N.)
Gutter – x (0) and Gutter – y(0)
Repeat Position – x and Repeat Position – y
Offset –x and Offset –y
Quantity x and Quantity y

These messages and possible answers are described here in detail for your convenience and ease of reference. The function may vary slightly in its sequence according to the answers given to the queries.

Automatic (Yes)

This query refers to the **Nesting** of the blanks.

Answer no and you can now arrange the layout yourself.

Confirm and the blanks will be arranged with or without gutters. (Query will follow). When you select the nesting type **std** the blanks will be arranged according to their outermost borders.

Now, the system will want to know some data relevant to the type of nesting selected. This query is displayed **after** the inquiry **Count. (N.).** We have listed the following dialog to illustrate how it appears when you select nesting type **t1b1**:

Horizontal Line of Blank 1	*Click the horizontal line (a) of blank 1 which should converge with blank 0*
Horizontal Line of Blank 0	*Click the horizontal linie (b) of blank 0 which should converge with blank 1*
Distance (0)	*Enter the vertical distance between the blanks.*
Verticale Line of Blank 2	*Click the vertical line (c) of blank 2 which should converge with blank 0.*
Vertical Line of Blank 0	*Click the vertical line (d) of blank O which schould converge with blank 2.*

Distance (0) *Enter the horizontal distance between the blanks.*

O.K.? *Click YES to continue the function.*

Click NO and the query is repeated and you can modify the entered data.

Optimize (N.)

This query refers to the required sheet/cutting die format. Optimizing it means to establish the optimal number of blanks per sheet for each specific nesting type in order to minimize waste.

If you answer **NO**, the blank lay-out is not optimized by the system. In this case you have to determine the number of blanks which you want to place in the appropriate x- and y- directions.

If you answer **YES**, the system will ask: **Optimize to standard formats (YES).**

Here again, you have two different possibilites to continue the dialog:

a:)

Optimize to standard formats (YES) *Click **Yes***

Type? With this question all possible nesting types will appear in a frame on the left side of the screen. Select the required type by clicking on it. More queries will follow until you find the following question:

Different nesting? (YES)

*Answer **YES** and select a different type of nesting.*

*Answer **NO**, and a pop-up window will appear containing a list of 4 different standard formats per nesting type for each long and short side. It also includes important data relevant to the blank lay-out.*

Draw the required blank lay-out by clicking the appropriate display. The number of blanks in x- and y-direction must also be confirmed again.

Sheet formats can be specified and entered at the end of the table **metric.tab** following the meassage **qsize**. **Metric.tab** can be found in directory **/users/diecad**.

b.)

Optimize to standard formats (YES)

*Click **NO**.*

paper size x:

Enter the format of the sheet in x-direction.

paper size y:

Enter the format of the sheet in y-direction.

different paper size (YES)

*If your answer is **positive** you can enter further sheet formats.*

*Click **NO*** and the next query will appear.

Type? With this query all possible nesting types will appear in a window on the left side of the screen. Select the required type by clicking on it. More queries will follow until you find the following question:

Different nesting?

(YES) *Confirm this and you can select a different type for nesting.*

Enter **NO** *and a pop-up window will appear listing essential data für sheet sizes and nesting types. (See manual II-148)*

Definitions of the messages are listed below:

No. Current number of the suggested nesting lay-out.

Type Nesting type.

Format The sheet size you have entered (long side, short side).

x Calculated number of blanks in x-direction.

y Calculated number of blanks in y-direction.

Waste Total waste with regard to a specific paper format.

Kn → Kn	calculated knife-knives format.
Waste	calculated waste for gripper edge, i.e. waste between the first knife and the sheet edge.

A specific nesting type is displayed on the screen simply by clicking on it in the pop-up window.

Count (N.)

Usually this query is confimred unless you want to set up a blank lay-out from a counterplate.

Std flaps (N.)

You should answer **YES** if the blank contains standard flaps (i.e. flaps from the standard catalogue).

It can also be confirmed if the flaps have been custom-designed by the user. The system will calculate the required dimensions for the blank lay-out.

Gutter cut -x (0) and gutter cut -y (0)

Here, the distance between the blanks is defined. Confirm or enter the required dimensions.

Repeat position-x and repeat position-y

The system calculates the distance from the first knife of the original blank up to the first knife of the next blank in x- and y-directions.

For a nesting type containing rows of rotated blanks (for example: t1t3), the calculation for the y-direction refers to the distance from the first knife of the original blank up to the first knife of the next blank in a subsequent row which has not been rotated.

Confirm or enter the required dimensions.

Offset-x (0) and offset-y (0)

The word **Offset** defines the distance between the beginning of the original blank and the origin of the first blank in the first row that has been rotated in x- and y-directions.

Confirm or enter the required dimensions.

Quantity x and Quantity y

Here, you can enter the required number of blanks in x and y- directions.

Confirm a given value in parantheses or enter the required number.

When calling up this function the following messages will appear:

Blank Element?	*Click on an element of a blank from which you want to start building up a blank lay-out.*
Automatic (YES)	*Confirm or enter No..*
Optimize (N.)	*Confirm or click **YES**.*

Type? Simultaneously with this question all possible nesting types will appear in a frame on the left side of the screen.

Select the required type by clicking on it.

If you choose **std** the blanks will be laid-out in x- and y-directions without being rotated or lodged against each other.; The blanks are repeated with exactly the same position as the original blank.

Count (N.) *Confirm with **NO** or click **YES**.*

Std flaps (N.) *Confirm with **NO** or click **YES**.*

Gutter cut-x (0) *Enter the gutter in x-direction*

Gutter cut-y (0) *Enter the gutter in y-direction.*

.

Repeat position-x (0) *Enter the repeat position in x-direction.*

Repeat position-y (0) *Enter the repeat position in y-direction.*

Offset-x (0) *Confirm.*

Offset-y (0) *Confirm.*

Quantity x *Enter the number of blanks in x-direction.*

Quantity y *Enter the number of blanks in y-direction.*

If you select option **t1b1** the blanks will be laid-out so that sections t1 and b1 are facing each other.

Count (N.)	*Confirm with **NO** or click **YES**.*
Std flaps (N.)	*Confirm with **NO** or click **YES**.*
Gutter cut-x (0)	*Enter the gutter cut in x-direction.*
Gutter cut-y (0)	*Enter the gutter cut in y-direction.*
Repeat position-x (0)	*Enter the repeat position in x-direction.*
Repeat position-y (0)	*Enter the repeat position in y-direction.*
Offset-x (0)	*Confirm.*
Offset-y (0)	*Confirm.*
Quantity x	*Enter the number of blanks in x-direction.*
Quantity y	*Enter the number of blanks in y-direction.*

If you select option **t1t4** the 2nd, 4th., etc. row of blanks is mirrored about the x- and y- axes; Sections t1 and t4 are facing each other now.

Count (N.)	*Confirm with **NO** or click **YES**.*
Std flaps (N.)	*Confirm with **NO** or click **YES**.*
Gutter cut-x (0)	*Enter the gutter in x-direction.*
Gutter cut-y (0)	*Enter the gutter in y-direction.* .
Repeat position-x (0)	*Enter the repeat position in x-direction.*
Repeat position-y (0)	*Enter the repeat position in y-direction ein.*
Offset-x (...)	*Confirm.*
Offset-y (...)	*Confirm.*
Quantity x	*Enter the number of blanks in x-direction.*
Quantity y	*Enter the number of blanks in y-direction.*

If you select option **t1t3 the** 2nd., 4th. row of blanks etc. is mirrored about the x- and y-axes; Sections t1 and t3 are facing each other now.

Count (N.) *Confirm with **NO** or click **YES**.*

Std flaps (N.) *Confirm with **NO** or click **YES**.*

Gutter cut-x (0) *Enter the gutter cut in x-direction.*

Gutter cut-y (0) *Enter the gutter cut in y-direction.*

.

Repeat position-x (0) *Enter the repeat position in x-direction.*

Repeat position-y (0) *Enter the repeat position in y-direction.*

Offset-x (0) *Confirm.*

Offset-y (0) *Confirm.*

Quantity x *Enter the number of blanks in x-direction.*

Quantity y *Enter the number of blanks in y-direction.*

If you select option **t2t4** the 2nd., 4th. row of of blanks etc. is mirrored about the x- and y-axes; Sections t2 and t4 are facing each other now.

Count (N.)	*Confirm with **NO** or click **YES**.*
Std flaps (N.)	*Confirm with **NO** or click **YES**.*
Gutter cut-x (0)	*Enter the gutter cut in x-direction.*
Gutter cut-y (0)	*Enter the gutter cut in y-direction.*
Repeat position-x (0)	*Enter the repeat position in x-direction.*
Repeat position-y (0)	*Enter the repeat position in y-direction.*
Offset-x (0)	*Confirm.*
Offset-y (0)	*Confirm.*
Quantity x	*Enter the number of blanks in x-direction.*
Quantity y	*Enter the number of blanks in y-direction.*

If you select option **t2t3** the 2nd., 4th row of blanks etc. is mirrored about the x- and y-axes; Sections t2 and t3 are facing each other now.

Count (N.)	*Confirm with **NO** or click **YES**.*
Std flaps (N.)	*Confirm with **NO** or click **YES**.*
Gutter cut-x (0)	*Enter the gutter cut in x-direction.*
Gutter cut-y (0)	*Enter the gutter cut in y-direction.*
Repeat position-x (0)	*Enter the repeat position in x-direction.*
Repeat position-y (0)	*Enter the repeat position in y-direction.*
Offset-x (0)	*Confirm.*
Offset-y (0)	*Confirm.*
Quantity x	*Enter the number of blanks in x-direction.*
Quantity y	*Enter the number of blanks in y-direction.*

Blank Frame:

This function is mainly used to create a lay-out from several different original blanks.

Frame the original blanks.

Screen section bottom left	*Define the lower left corner point of the frame.*
Screen section top right	*Define the top right corner point of the frame.*
Columns (x)	*Enter the number of duplicates you want to make of the framed blank lay-out in x-direction (including the original design).*
Rows (y)	*Enter the number of duplicates you want to make of the framed blank lay-out in y-direction (including the original design).*
x-Offset	*Enter the distance between any point of the original blank lay-out and the equivalent point in the first copy in x-direction.*
y-Offset	*Do the same in y-direction*

.

Blank Quadrant:

The original blank is mirrored in the x- and y-direction.

Blank Element?	*Click on an element of the blank you want to copy.*
Origin	*Define the centre of the copying sequence, i.e. the point around which you want to arrange the copies.*

Blank in Block:

Only blanks which are entirely inside the defined frame are copied.

Screen section bottom left	*Define the lower left corner point of the frame.*
Screen section top right	*Define the top right corner point of the frame.*
Rotation-Scaling Point	*Define the rotation point for scaling.*
Angle (0)	*Enter the angle of rotation.*
x-Scal.-Factor (1)	*Enter the x-scaling factor.*
y-Scal.-Factor (1)	*Enter the y-scaling factor.*
Moving	*Enter the distance between a reference point of the original blank and an equivalent point of the copy.*

Blank Filling:

This function is used to fill in a defined section with a blank lay-out which in turn was previously created from a smaller blank lay-out.

First, frame the blanks which form the original blank lay-out. Then, define the area to be filled in with the blank lay-out already created. Finally, enter the x- and y- offset.

Before you call up this function you can fix the point of origin of the blank you want to frame (i.e. the coordinate position 0,0) to the lower left intersection point of the outermost blank line by using macro **mvdis.**

Screen section bottom left	*Define the lower left corner point of the frame with which you want to frame the blanks.*
Screen section top right	*Define the top right corner point of the frame with which you want to frame the blanks.* This function does **not** allow you to use the left mouse to define the screen section.
Origin	*Define the origin of the area to be filled with the framed blank lay-out.*

to	*Define the size of the area by entering the coordinatas, e.g. 1420 1020.*
x-Offset	*Enter the x-offset. (It can be measured by pressing [Esc][Return]. The result can be transferred by confirming it.)*
y-Offset	*Enter the y-Offset. (It can be measured by pressing [Esc][Return]. The result can be transferred by confirming it.)*

Blank Radial:

Blank Element?	*Click any element of the blank you want to copy..*
Rotation-Scaling point	*Define the rotation-scaling point.*
Origin	*Define the centre of the copying sequence.*
Quantity	*Enter the total number of required designs, i.e. original blank + all copies you want to create.*
Radius	*Enter the radius of the copying sequence.*
Starting angle	*Enter the starting angle of the first copy.*
Repeat angle	*Enter the angle of all following copies.*
1. Rotation	*Enter the starting rotation angle of the copying sequence.*
Relative rotation angle	*Enter the rotation angle of each single copy.*

Blank T1B1 Automatic:

This function always uses nesting type **t1b1**.

To perform this function proceed as follows:

There are already one or more blanks or a whole blank lay-out on your screen.

Now define a frame by using macro **nestbox** which shows the available sheet formats. Click the button to access the macro in the tool bar:

Filename	*Enter **nestbox**.*
From	*Define the bottom left corner point of the frame to be created.*
Width	*Enter the width of the frame.*
Height	*Enter the height of the frame.*

Now, click button for **T1B1 automatic**:

Element?	*Click any element of a blank from which you want to build up a blank lay-out to fill in the remaining available space.*
Count (N.)	*Confirm with **NO** or click **YES**.*
Gutter cut-x (3)	*Enter the gutter cut in x- direction.*
Gutter cut-y (3)	*Enter the gutter cut in y-direction.*
Quantity x (...)	*Confirm the suggested number of blanks in x-direction or change it to your liking.*
Quantity y (...)	*Confirm the suggested number of blanks in y-direction or change it to your liking.*

TEXT

To access “Text“ in the toolbox click this button in the toolbar:

The following window is displayed:

(You can automatically access the respective help function by clicking the appropriate buttons in the toolbox)

Text:

With this function you can create texts in DIECAD NT 10.5. After clicking the button the following dialog will appear:

Height	*Enter the height of the characters*
Width	*Enter the width of the charcters*
Point	*Define the starting point of the text*
Angle (0)	*Enter the angle of inclination of the text*
Justification	With this query the following options are displayed **Left**, **Right** and **Centre** in a frame on the left of the screen for justification of the text in **horizontal** direction

Click **Left** and the text is written from left to right starting from the position of the point defined (see above).

The options **Bottom**, **Centre** and **Top** will appear in the same frame for adjustment of the text in **vertical** direction.

Please find the various options for text formatting in the manual on II-179.

CTEXT:

This function allows you to replace an existing text by a newly entered text. All features defined for the original text will remain (character size, angle and justification), but a new line type can be selected prior to calling up this function.

Each unit of text entered by pressing *[Return]* is considered a separate unit by the system. The function described above will always affect such a unit.

Text	*Click the text you want to replace by a different one*
Text	*Enter the new text*

DTEXT:

This function allows you to write a text with the identical height, width and justification as any other, already existing text. The angle of inclination is disregarded.

This function is particularly suited for entering text into tables.

Text	*Cick the already existing text*
From	*Define any reference point you select, e.g.in a table*
To	*Define a second reference point.*
From	*Define the starting point of the new text*
Text	*Enter the new text.*

Please find a sample of application for this function in the manual on II-181.

DTXT:

This function allows you to create text with freely selectable character sizes from an already existing text but with the option of relocating this text. The relocation must be defined. Any existing angles are disregarded.

Height	*Enter the height of the characters*
Width	*Enter the width of the characters*
Moving:	*Enter the displacement between an already existing and the new text*
Point	*Define the point from which the displacement is calculated*
Text	*Enter the new text*

Please find a sample of this function in the manual on II-181.

BTXT:

With this function you can write text below or above another text. At the same time you can continuously relocate all following text lines from the first created line.

Height	*Enter the height of the characters.*
Width	*Enter the width of the characters*
Distance (2)	*Enter the distance between the lines*
Displacement	*Enter the displacement*
Text	*Enter the text*

Please find a sample of application for this function in the manual on II-182.

Change Text Size:

Each part of the text entered by pressing *[Return]* is considered a unit by the system. The function described here always affects such a unit.

Therefore, If you want to change the character size of a single word only, enter it separately and in advance.

Height	*Enter the new height of the character*
Width	*Enter the new width of the character*
Text	*Click the text whose character size you want to change.*

Delete Text:

Text entered in one go by having called up the respective function once is considered **one** element by the system, even if it consists of multiple words; Therefore the entire text is deleted.

If you want to delete only a single word, enter it separately and in advance.

Text *Click a letter of the text you want to delete*

DIECAD NT Version 10.5

Dimensioning

To access “dimensioning“ in the toolbox click this button in the toolbar:

The following window will appear:

(You can automatically access the respective help functions by clicking the appropriate buttons in the toolbox)

Dimensioning Horizontal:

When the intersecting point is identical with the starting or end point of the line to be dimensioned no auxiliary dimension lines are drawn.

The dimension value is placed between the auxiliary lines if there is sufficient space. If not, the position of the intersecting point is decisive for the side on which the dimensional value is placed.

From	*Define the starting point of the line to be dimensioned*
To	*Define the end point of the line to be dimensioned*
Intersecting point	*Define the intersecting point of the dimension line*

Dimensioning Vertical:

When the intersecting point is identical with the starting and end point of the line to be dimensioned no auxiliary dimension lines are drawn.

The dimension value is placed between the auxiliary lines if there is enough space. If not, the position of the intersecting point is decisive for the side on which the dimensional value is placed.

From *Define the starting point of the line to be dimensioned*

To *Define the end point of the line to be dimensioned*

Intersecting point
Define the intersecting point of the line to be dimensioned

Dimensioning Radius:

Provided there is enough space the dimensions are placed inside the arc or circle. If there is not enough space the position of the intersecting point is decisive for the positioning of the dimension.

Arc	*Click the arc or circle to be dimensioned*
Intersecting point	*Define the intersecting point*

Automatic Chain Dimensioning:

All horizontal or vertical lines between two points can be dimensioned without having to determine starting-, end- or intersecting points for each line.

For horizontal chain dimensioning click as first and second line the two outermost vertical lines to be dimensioned (see query below), for vertical dimensioning click the two horizontal lines.

From 1. line	*Click the first line*
To 2. line	*Click the second line*
Intersecting point	*Define the intersecting point*

Dimensioning Initialising:

The **Initialise** function must always be called up prior to selecting any other measuring functions or dimensioning is not possible. It provides an automatic calculation of the font character size and should be carried out on the second section level (/D1).

A separate section is created on the level of the section to be dimensioned for the dimensioning data file. This ensures a correct calculation of the size of the dimension text (i.e. the numerical dimension value).

You can also specify the size of the dimension text yourself.

The distance of the dimension text and the dimension line is set by the system. It is two millimeters and can be found in the table **metric.tab.**

Section element?	*Select section (/D1)*
Correct height of text? (Yes)	*Confirm if you agree with the height of the font characters* *If you don´t agree you can change the height of font characters*

Correct width of text? (Yes)

For an optically pleasing display the width of the font characters should be about 2/3 of the height of the font characters.

Confirm if you agree with the width of font characters

If you don`t agree you can change the width of the font characters

Change dimension (No)

Confirm by clicking **NO** *and the size of the dimensional text calculated by the system is added automatically*

By clicking ***Yes*** *you can modify the dimensional text according to you own requirements*

Now you can add dimensions to a design by calling up the various dimensioning functions in the toolbox.

Dimensioning of Horizontal Angles:

The measuring line runs in a horizontal direction. The position of the intersecting point determines which of all possible angles is dimensioned.

/ Line	*Click the slanting line to be dimensioned*
Iintersecting point	*Define the intersecting point of the dimension line*

Dimensioning of Vertical Angles:

The measuring line runs in a vertical direction. The position of the intersecting point determines which of all possible angles is dimensioned.

/ Line	*Click the slanting line to be dimensioned*
Intersecting point	*Define the intersecting point of the measuring line*

Vertical Chain Dimensioning:

With this function you can add dimensions to all vertical lines between two points without having to define the starting or intersecting points of each individual line. Just define them for the first line. For all following lines only the end points must be defined.

Please note that you have to dimension from bottom to top (upwards).

From	*Define the starting point of the first vertical line to be dimensioned*
To	*Define the end point of the first vertical line to be dimensioned*
Intersecting point	*Define the intersecting point of the first dimension line*
To	*Define the end point of the following line to be dimensioned*

Horizontal Chain Dimensioning:

With this function you can add dimensions to all horizontal lines between two points without having to define starting and end points of each individual line. Just define them for the first line. For all following lines only the end points must be defined.

Please note that you have to dimension from left to right.

From	*Define the starting point of the first horizontal line to be dimensioned*
To	*Define the end point of the first horizontal line to be dimensioned*
Intersecting point	*Define the intersecting point of the first dimension line.*
To	*Define the end point of the next line to be dimensioned.*

Dimensioning Slanting Line:

If the intersecting point is identical with the starting- and end point of the line to be dimensioned no auxiliary dimensional lines are drawn.

The dimensional value is placed between the auxiliary dimensional lines if there is space available. If not, the position of the intersecting point is decisive for the side on which the dimensional value is placed.

From	*Define the starting point of the line to be dimensioned.*
To	*Define the end point of the line to be dimensioned*
Intersecting point	*Define the intersecting point of the line to be dimensioned*

Dimensioning Diameter:

Dimensioning of an arc:

If there is sufficient space the dimensions are placed inside the arc or circle. If not, the position of the intersecting point is decisive for the positioning of the dimensional value.

Dimensioning of a circle:

If there is sufficient space the position of the intersecting point determines the positioning of the dimensional value. With smaller circles the dimensions are placed on the outside of the circle.

With circles whose diameters are smaller than the height of the dimensional value a dimensional line is drawn at an angle of +/- 45° or +/-135 ° outside the circle.

Circle	*Click the arc or circle to be dimensioned*
Intersecting point	*Define the intersecting point*

Dimensioning Ellipse:

With this function you can add dimensions to the main and side axis of an ellipse.

Dimensions are placed on the outside of the ellipse.

This function cannnot be used for an ellipse designed with **Design/Ellipse P**.

Ellipse *Click the ellipse to be dimensioned*

Dimensioning Angle:

The position of the intersecting point determines which of the possible angles are dimensioned.

/ Line	*Click the one of the two lines to be dimensioned*
/ Line	*Click the second line*
Intersecting point	*Define the intersecting point of the dimensional line*

Dimensioning Center Blanks:

The coordinates of the center of each blank in a blank lay-out appear inside the respective blank.

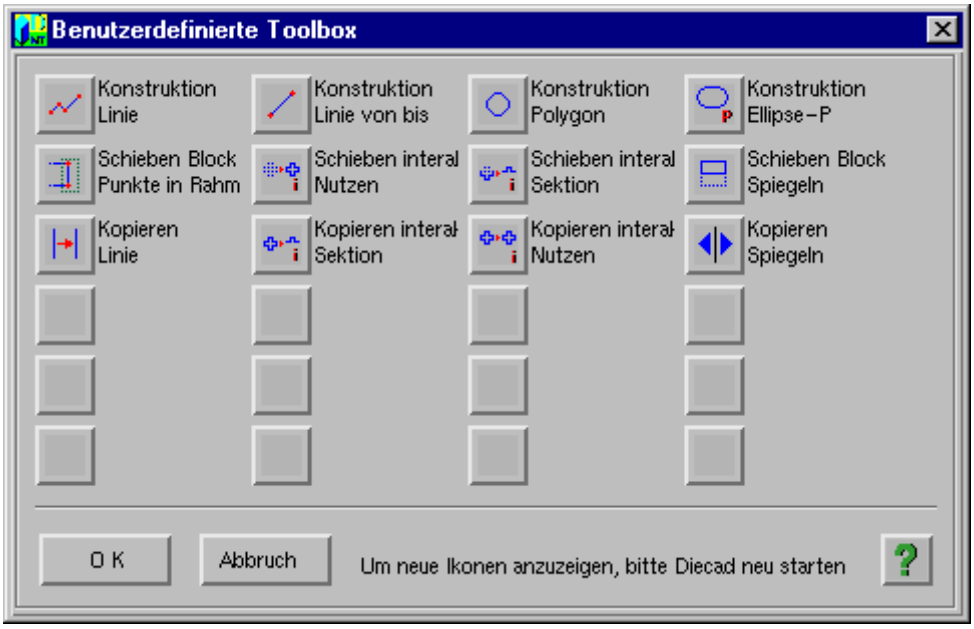
Dimensioning Delete:

You can automatically delete the dimensioning of a single blank.

To delete dimensioning of a whole blank lay-out you can
call up the macro **delpap**.

Own Toolbox

Under menu “Options Own Toolbox“ you can tailor-make your own toolbox with a variety of functions. The following window is displayed:



Here, you can select and assemble a maximum of 24 pixmaps from a list to fit your own requirements.
Just click one of the buttons which will be marked red and a list will appear with all available pixmaps.
If you move the mouse slowly over the list of pixmaps the respective function will be displayed as tooltip in the DIECAD text window.
As soon as you click on a pixmap the window is closed and the marked button is designated to the respective function as shown in the window “Own Toolbox”.
The accompanying icon is not shown immediately. First, you have to restart DIECAD in order to activate the symbols.

If you want to delete an allocated button, just click it. The pixmap window appears again and you can click the delete button. The pixmap window is closed and the respective function is deleted.

Click OK and the definitions are saved in your own customized toolbox.

Now, you can activate your own toolbox from the toolbar in DIECAD:

As soon as you click one of the buttons the respective function is carried out.

Measure

To access “Measure“ in the toolbox click this button in the toolbar:

The following window will appear:

(You can automatically access the respective help function by clicking the appropriate buttons in the toolbox)

Measure Position:

Position *Define the point.*

Measure Position Interactive:

When calling up this function the current position of the cursor is displayed in blue in the graphics window on the top right side.

As soon as a defined point is found the position display changes to green.

Measure Distance Horizontal:

From	*Define the first point.*
To	*Define the second point.*

Measure Distance Vertical:

From *Define the first point.*

To *Define the second point.*

Measure Distance:

From	*Define the first point.*
To	*Define the second point.*

Measure Radius:

Element *Click the arc or circle.*

Measure Length:

Element *Click the element.*

Measure Angle between two Points:

From	*Define the first point.*
To	*Define the second point.*

Measure Angle between Three Points:

From	*Define the (imaginary) intersection point of the two sides of the angle to be measured.*
To	*Define the second point.*
To	*Define the third point.*

Measuring the Angle of an Arc:

Element *Click the element.*

Measure Diameter:

Circle *Click the arc or circle.*

Measure X:

Point *Define the point.*

Measure Y:

Point *Define the point.*

Measure LENGTHS:

With this function the lengths of elements clicked in sequence are added up.

Element	*Click the first element.*
Element	*Click the second element.*
	The length of the second element will be added to that of the first element and so on.

Measure Distance Element:

With this function you can measure the shortest distance between a line and one other element.

For a circle or arc the system will put an invisible tangent to these and then it will measure the distance between the line and the tangent.

If the lines are intersecting “0“ is displayed.

Line	*Click the line.*
Element	*Click the element.*