COPRA® MetalBender
Professional 3D-Sheet Metal Design and Flat Pattern Calculation for AutoCAD and AutoCAD Mechanical

www.datam.de
COPRA® MetalBender AutoCAD
Professional sheet metal design and unfolding

COPRA® MetalBender 2D
The design and flat pattern calculation of folded sections or complex box type shapes are managed by COPRA® MetalBender 2D. The section contours are simply designed as a 2D-polyline. This saves time and allows a quick improvement of your productivity. The COPRA® MetalBender 2D provides all necessary technologies like the calculation of the neutral line, the calculation of the overbend angle and radii for the compensation of spring back effects and the design of bending sequences.

COPRA® MetalBender 3D
The powerful design utilities allow an easy and quick design of even very complex sheet metal parts. Flanges to be added can be filleted or sharp-edged, with or without relief cut as well as with a predefined offset from the reference edge. The integrated preview allows a collision control already during the definition of the flange parameter. COPRA® MetalBender 3D also provides the possibility to convert 2D shapes or contours automatically into 3D solid models. The created solid model can be completed with all necessary features like punch holes, notchings and piercings.

COPRA® MetalBender Solver
The software is perfectly integrated in the user environment of AutoCAD and Mechanical Desktop and calculates the exact flat pattern geometry of 3D sheet metal parts including overbending angle and -radii. The optional reduction of the intersection points or automatic conversion into arcs allows an optimised production sequence. For the calculation of the neutral line the methods according to DIN 6935, material properties, machine correction tables or expert values are available. The overbend angle and -radii are calculated taking the material properties and bending method into account. COPRA® MetalBender Solver also provides extra tools to check the flat pattern and apply any necessary modification automatically.

System requirements:
Latest AutoCAD or AutoCAD Mechanical version
Internet:
www.copra-metalbender.com

- Exact and fast flat pattern calculation replaces the time consuming manual calculation
- Automatic calculation of corner intersections saves a lot of design time
- Drawing generation of bending steps
- Calculation of progressive bending steps unfolding in multiple steps
- Powerful flat pattern editing tools insert any relief cuts or punch tool shapes
- Automatic design of 3D sheet metal boxes complete boxes out of 2D contours
- User friendly handling Windows look-and-feel
- Design in 2D, automatic conversion into 3D powerful tool for automatic box design
- Powerful editing tools allows a "semi-parametric" handling
- Comfortable 2D-view creation of solid models
- Realistic transition of bent areas in corners avoids reworking of the flat pattern
- Optimisation of the flat pattern data for easy NC-programming default for punching or laser cutting
- Create simulation model for an easy check of manufacturability

- Calculation of the neutral line according to DIN 6935
- Machine dependent correction factors
- Use company specific know how
- Calculation of overbend angle and -radii for springback compensation
- Bothsided flat pattern calculation for intersection curves in thick material
- Take break-through objects into account calculation of the required cutting curve
- Optimize points of intersection curves convert splines into radii
- Flat pattern calculation for sharp-edged parts allows flat pattern calculation of transitions
- Flat pattern calculation for solid models can unfold any bendable 3D solid
- Specific corner (trunk-like corner)
- No training cost
- Exact and fast flat pattern calculation including all punch holes etc.
COPRA® MetalBender HVAC

Professional sheet metal design and unfolding for Transitions and ductings

The 3. dimension for Heating, Ventilation and Air-conditioning. A great number of easy-to-use and helpful features are available. If you do not find your desired parametrised 2D-macro – just design it as a 3D AutoCAD Solid. The user is able to modify the shape or position of already defined parts.

The flat pattern can then be calculated by using the included COPRA® MetalBender Solver. Using the membrane model is very helpful if you have to handle heavy gauges (thick material). In this case you are able to overlay top- and bottom side of the flat pattern.

- Easy to use
- Parameter driven 2D and 3D part library
- Quick modification by entering new parameters
- Calculation of blanks with all intersection curves
- Curves represented as continuous lines or arcs
- NC programming interface

2D-unfolding library
- Pipe
- Pipe branch
- Elbow
- Bend
- Concial bend
- Cone
- Cylinder/cut cylinder
- Transitions/round to round, round to rectangular and rectangular to rectangular
- Cut prism/cut pyramid
- Forked pipe round and round-rectangular
- Dished boiler end
- Cut conus

3D-unfolding library
- All kinds of cylinder/conus or conus/cylinder intersections, even if there are several branches
- Cylindrical or conic branch on dished boiler end

Transitions (any combination) from
- Round
- Rectangular
- Filleted rectangular

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