Universal cutting machine Type R-EFM
with integrated hole-punching unit Type R-EFM-L

The basic idea of the universal cutting machine is the machine-supported manufacture of molded parts by means of a cutting procedure proven for decades in fine sheet machining: the electric sheet shears, in a strongly revised shape with regard to the forces which arise in the system.

With 3 high-performance and highly precise step motors, the shears go through the sheet "as if by hand", but with high repeat accuracy.

All mechanical components are oversized in order to guarantee many years of smooth system operation.

The molded parts are fundamentally cut out ready-to-use, and with the optional hole-punching unit, a major portion of the work preparation is saved. The time-consuming process of marking bending lines, especially for transition pieces and flattenings, is no longer necessary.

A Windows PC ensures that calculations are fast and precise, even for the most complicated processes. The intuitive operating program was developed on our premises and is tuned to the special needs of insulators.

The standard scope of delivery already includes programs which cover most of the work involved in the daily routine of an insulating plumber; still, we are willing to realize new customer ideas as program extensions.

We are always striving to make the most of all possibilities in process theory, so that even the most complicated specifications can be computed. For example, a bent connecting piece is computed in all directions at the same time: turned, inclined, conical + 2 x flattened, optionally with/without triangular transition. The same applies for seam positions, seam angles, circumferential parts, etc.

EFM-L 26.1

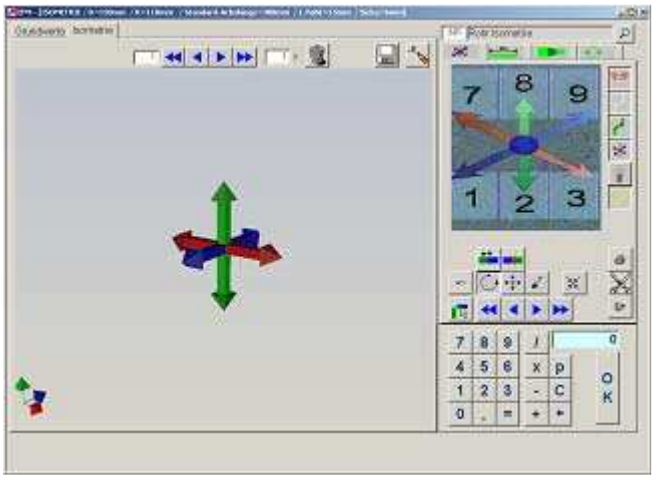
As a control, there is a spatial preview, which is included in the standard scope of delivery, which shows you exactly the correctness of the dimensions and the position of welded seams and flattenings.

You can save and load as many models as you like for every program run, and build up your own personal library of models, which you can access at any time.

Even the creation and management of entire building sites is not a problem. After entering all positions, you can make an overview of the sheets and cuts to be processed.

The exact cut is guaranteed by high-resolution, high-performance step motors. These are gently and variably accelerated and decelerated in online mode, depending on the traversed curve, in order to guarantee the smooth, uniform behaviour of the cutting tool.

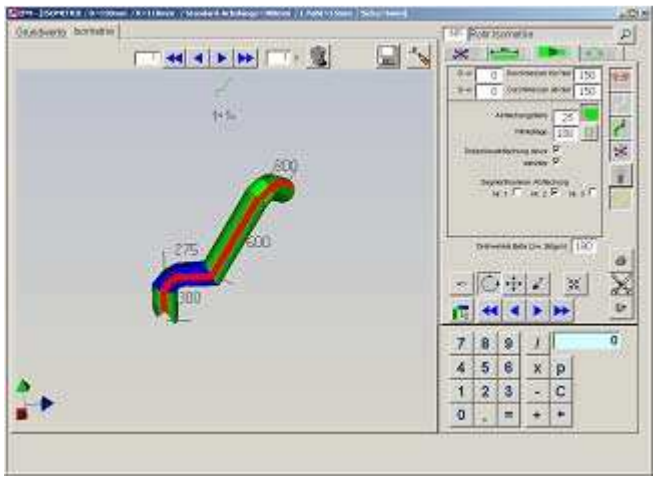
The user program is tuned to the special needs of the insulator, and has trendy 3D graphics, which help with input and to avoid errors.



For example, the program Pipe Isometry allows pipelines to be entered with graphical support.

By touching the coloured arrows on the touchscreen display, you can create bend segments and can then change all parameters.

Every changed parameter is displayed directly; this way, one can see the finished product before installation and can avoid input errors.



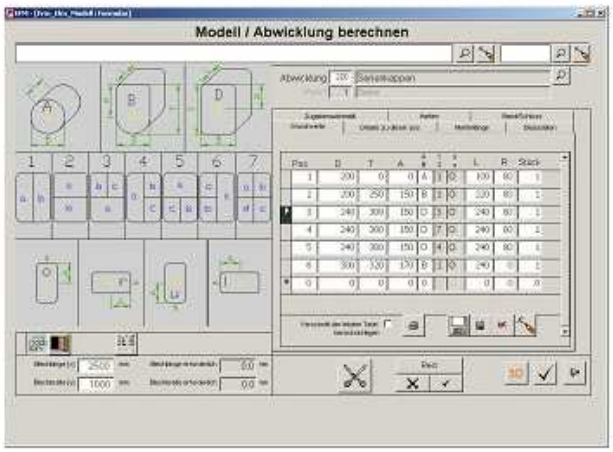
Even complicated connections can be completed quickly and clearly. Besides the pipe geometry, the graphics also show the position of the seams and axis lengths.

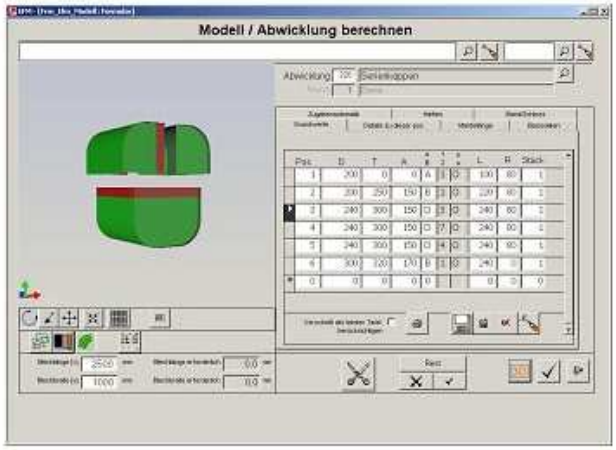
One can combine pipe segments, pipe bends, (inclined) connecting pieces, cones, flattenings (with/without triangle), and much more.

This way, up to 40 isometries can be put together at once, which the program optimizes to minimize leftover sheet metal.

Furthermore, there is also the possibility to connect a label printer for optimizing your production.

There is also the option of printing out a copy of what's on the screen with a colour printer for documentation purposes.





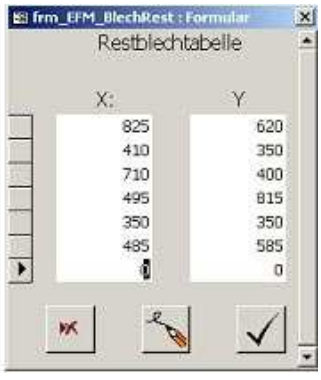
The program Series Caps, for rationally manufacturing diverse caps, can be used to enter and cut single or entire series of different caps, quickly and easily.

The program controls all common shapes (flange, fitting and suitcase form) and divisions (even asymmetrical).

Working with basic data and an ingenious, automatic add-on program makes input easier. This basic data is set in your system during training and can be easily changed.

This way, a standard cap can be input within a few seconds, since only the shape, division, and diameter have to be entered in the table.

All details regarding a single cap can be easily adapted, e.g. caps with indented lock seam, roof-top shape, flattenings and many more. And they can be looked at on the 3D preview.



If you should have relatively large metal sheets left over from previous cuts, enter these in the leftover sheet table. The program looks for the optimal way to cut the sheet, and uses all leftover sheets, if possible, before you place a fresh sheet in the system
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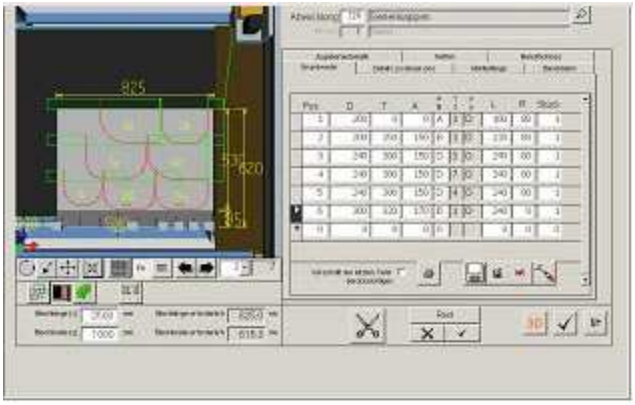
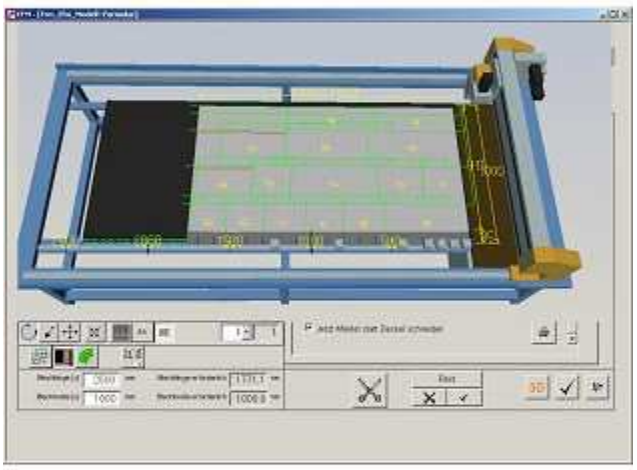
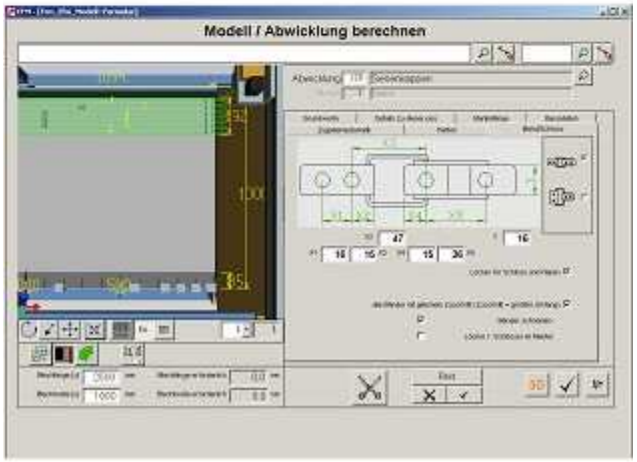




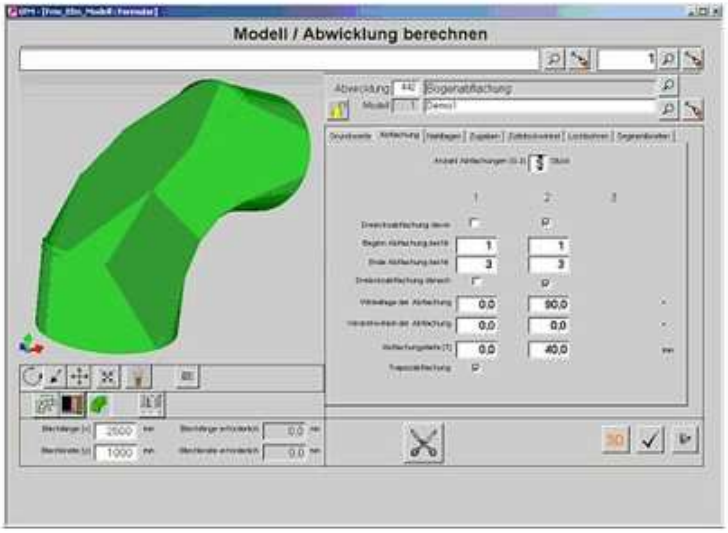


As a special feature, the covers and the sheathing are separately cut, in order to be able to work with different types of sheets/thicknesses.

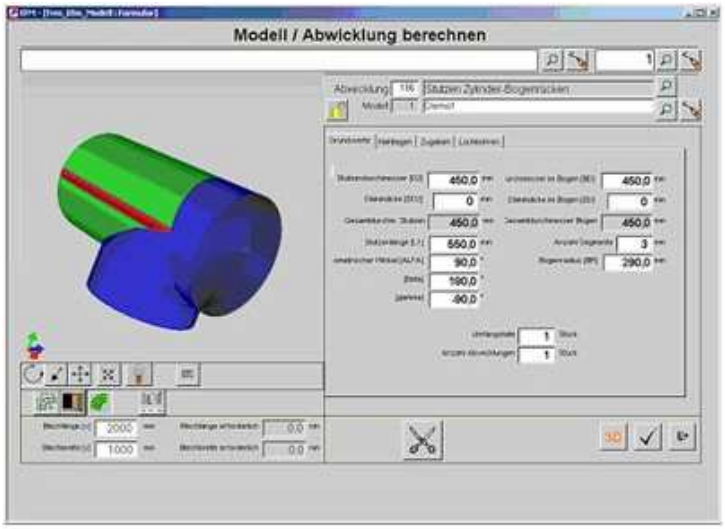
Further interesting features of this program include: (can always be activated/deactivated at will!)

- Platal function (for coated sheets)
- Holes in centre of disc
- Holes on quarter parts
- Holes at the overlap for foam caps
- Holes for adhesion in the sheathing
- Marking the corner radii for fitting caps or case caps
- Additional edging on the sheathing for reinforcement in the case of very long caps
- Punching holes and cutting of cap bands for diverse types of locks (!)
- Cutting of 3 different types of end discs (for pipes)
- Possibility to integrate in existing business software for automatic data transfer
- Roof-top shape and indented lock seam for external areas
- Control of a label printer
- Printout of production table for manufacturing

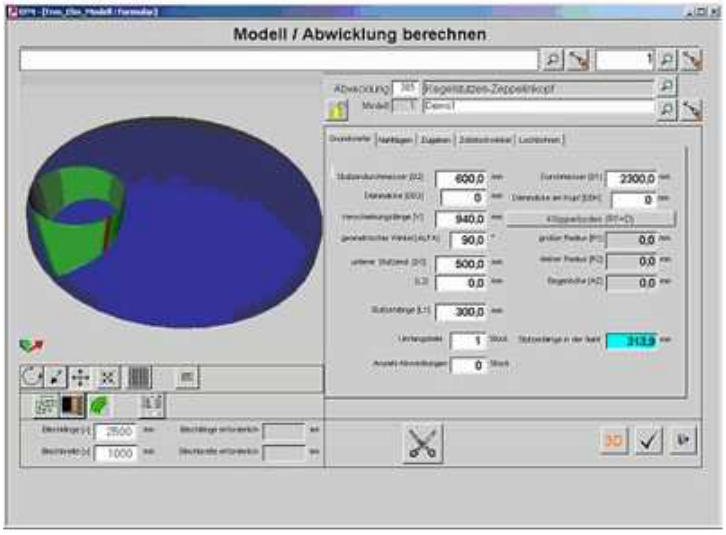
Besides the two introduced programs, the program package includes many other programs for rationally producing molded articles, such as bends, bundle conductors, contactors, funnels, tank heads, tank feet, flattenings, etc. When doing so, you always have an overview with the 3D preview.



Example:
Bend segment, flattened 2x. 1st flattening on the back, trapezoidal, 2nd flattening on the side with transitions as triangle. The flattenings intersect each other!



Example:
Contactors (green) on bend segment. The contactor can be turned in every desired position by means of 3 angles (even laterally and in the flute)



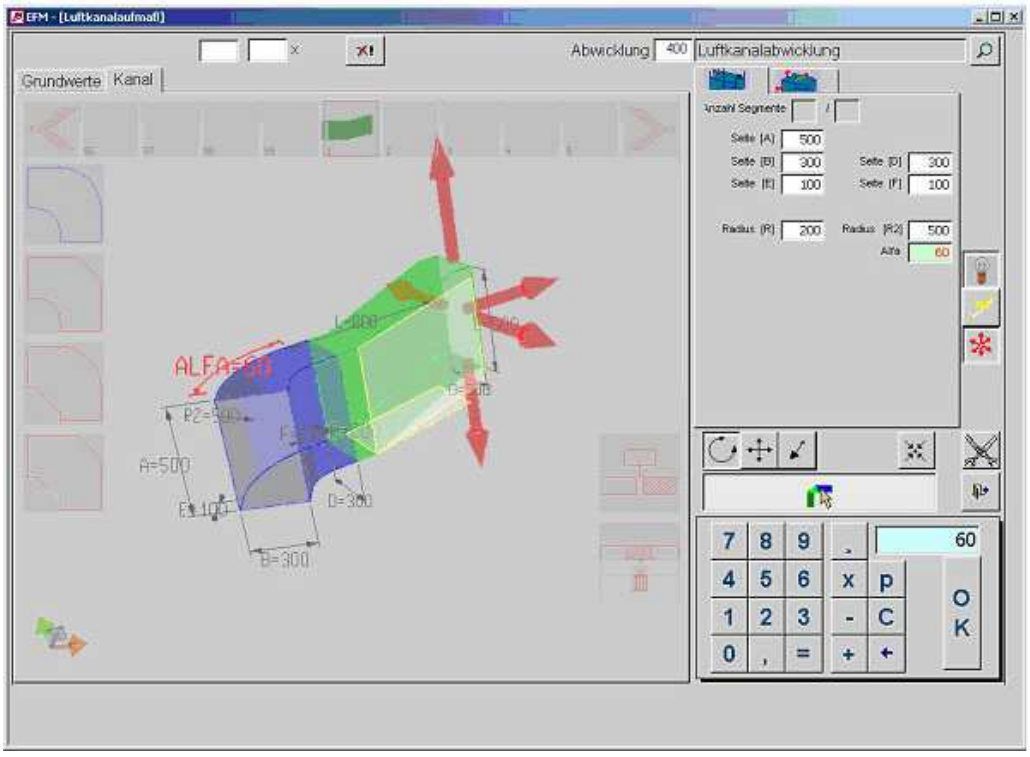
Example:
Contactors (green) on zeppelin head (tank foot). The contactor can also be designed in conical form and can touch the tank head at any place (transition between corner radius and tank radius is taken into consideration)

Example:
Bend segment in multiple piece number cut in series

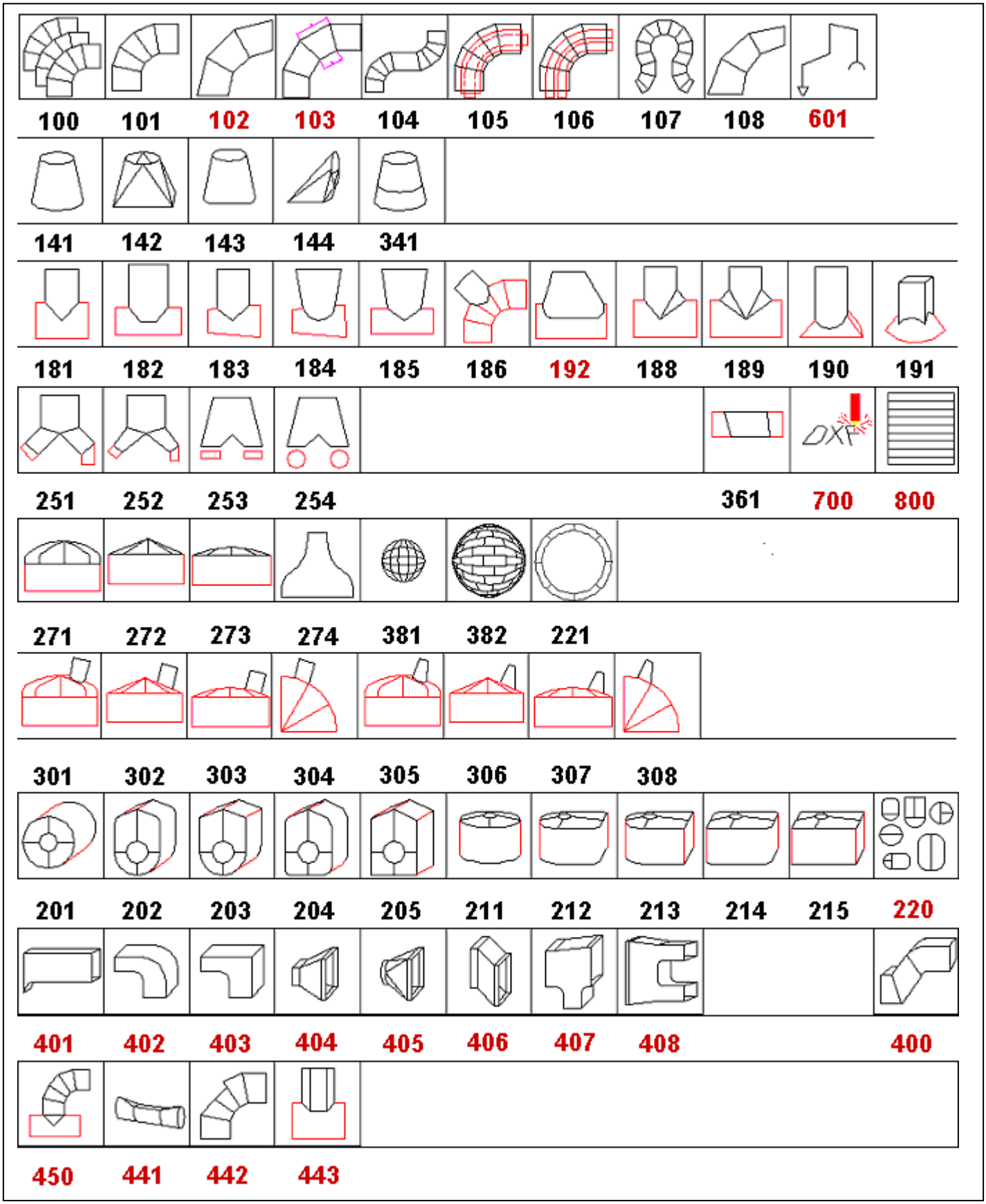
A further powerful program package will be completed soon: The insulation of ventilation systems.

Hereby, simple handling, a clear overview with 3D and versatility are perfectly reunified:

- Additional material is calculated and suggested automatically by the program
- Novel isometric dimensioning system
- Many different addition types for interior and exterior areas
- Fastening holes
- Freely selectable divisions and marking holes
- Marking holes for diagonal edgings over several parts
- Bending points marked



Selection menu of available programs:



Red program numbers represent special accessories

100	Multiple elbows	101	Elbow, free seam position	102	Reserve Bend	103	Bend with welded segments
104	Level, turned axis	105	Bank of elbows, next to each other	106	Bank of elbows, stacked	107	Lyra elbow
108	Cone elbow	141	Adaptor piece, round - round	142	Adaptor piece, round - angular	143	Adaptor piece, round - oval
144	Adaptor piece, round - angular 90°	181	Connecting piece Cylinder < - Cylinder	182	Connecting piece Cylinder > - Cylinder	183	Connecting piece Cylinder - Cone
184	Connecting piece Cone - Cone	185	Connecting piece Cone - Cylinder	186	Connecting piece Cylinder - Back of bend	188	Connecting piece Cylinder - Cylinder with a wedge
189	Connecting piece Cylinder – Cylinder with two wedges	190	Connecting piece Cylinder - Pyramid	191	Connecting piece Rectangle - Cone	192	Shoe connecting piece
221	Shock-cap-ring	251	Y fitting with cylindrical branches	252	Y fitting with cone branches	253	Y fitting with right-angled branches
254	Y fitting with transfer legs	271	Zeppelin head, clapper end / Basket end / free form	272	Cone head	273	Domed head
274	Dished head	301	Cylinder fitting on Zeppelin head	302	Cylinder fitting on cone head	303	Cylinder fitting on sphere
304	Cylinder fitting on ball	305	Cone fitting on Zeppelin head	306	Cone fitting on cone head	307	Cone fitting on sphere
308	Cone fitting on ball	341	Cone, multi-section	361	Pipe with 1 / 2 angled cuts	381	Sphere, small, with equal segments
382	Ball great with misaligned segments	441	Pipe smoothing device	442	Bend smoothing device	443	Fitting smoothing device
450	Connecting piece - bend	601	Pipe isometry	700	DXF-Import	800	Strip cutting device

Programs especially for the rational series cutting of caps:

220	Series caps (cover, cases, tapes, end plates)	201-205	Cap, in horizontal position (flanges, fittings, cases) just covers, 201 also pipe-end plates	201	Flanschenkappe / Stirnscheibe liegend	202	Armaturenkappe abgerundet liegend
203	Armaturenkappe eckig liegend	204	Kofferkappe abgerundet liegend	205	Kofferkappe eckig liegend	211	Flanschenkappe stehend
212	Armaturenkappe abgerundet stehend	213	Armaturenkappe eckig stehend	214	Kofferkappe abgerundet stehend	215	Kofferkappe eckig stehend

Programs especially for the insulation of ventilation systems:

400	Ventilation development	401	Connecting piece (SU)	402	Bend(BS/BA)	403	Angle pipe (WS/WA)
404	Ventilation transfer piece (US/UA)	405	Pipe transfer piece (RS/RA)	406	Ventilation level (ES/EA)	407	T-piece(TG/TA)
408	Y piece(HS)						

Technical data

Type		EFM 26.1	EFM 26.2	EFM-L 26.1	EFM-L 26.2
Sheet length up to	mm	2500	2500	2500	2500
Sheet width up to	mm	1000	1250	1000	1250
Max. feed (depending on cutting shape and material)	m/min	10	10	10	10
Sheet thickness (aluminium)	mm	1,5	1,5	1,5	1,5
Sheet thickness (galvanized steel) < 400 N/mm²	mm	1,2	1,2	1,2	1,2
Sheet thickness (VA) < 600 N/mm²	mm	0,8	0,8	0,8	0,8
Net weight approx.	kg	650	700	670	720
Operating pressure	bar	6	6	7	7
Power connection: 3x 400 V, 50 Hz, 16 A		x	x	x	x
Required space without the console LxW	mm	3400x1550	3400x1800	3400x1550	3400x1800

Subject to constructional changes

Accessories

Type	EFM 26.1	EFM 26.2	EFM-L 26.1	EFM-L 26.2
Multi-lingual dialog guidance	x	x	x	x
Hole-punching unit for making holes for screws and marking bores (EFM-L)			x	x
Electronically controlled lubrication device			s	s
Touchscreen operation	s	s	s	s

x = standard accessory s = special accessory

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