



ISO 9001:2008  
**CERTIFIED**  
COLD BENT STEEL PIPES



**Pipe bending**  
from **Ø15 - Ø508 mm**

# GMF A/S - supplier of cold bent pipes

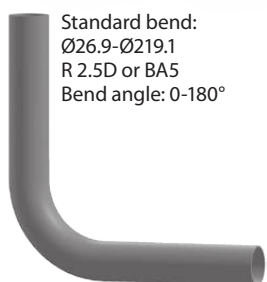
Over 20 years, GMF A/S has grown as a business from being a sole proprietorship to become one of Europe's largest suppliers of cold mandrel bent pipes.

In 1999, founder Frank Pedersen restructured the business into a limited company and relocated it to its present headquarters in Gelsted

Here we have upwards of 6,000 m<sup>2</sup> of production and warehouse facilities, more than 18 CNC and NC bending machines, and five cutting and bevelling units at our disposal.

As an experienced and key partner, we are in a position to provide solutions to all tasks in a quick and professional manner – regardless of whether these involve short production runs or longer ones, or indeed whether they are special tasks to customer specifications. We also work with all leading steel works.

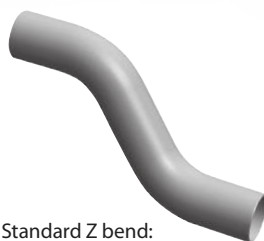
This ensures optimum reliability of supply, as well as grade quality to current standards.



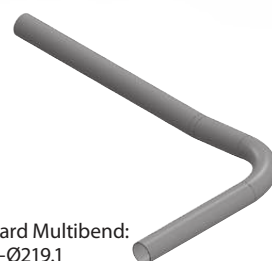
Standard bend:  
Ø26.9-Ø219.1  
R 2.5D or BA5  
Bend angle: 0-180°



Standard bend:  
Ø273-Ø508  
BA5  
Bend angle: 0-100°



Standard Z bend:  
Ø26.9-Ø219.1  
R 2D, 2.5D or BA5



Standard Multibend:  
Ø26.9-Ø219.1  
R 2D, 2.5D or BA5

## Bends in dimensions from Ø15 - Ø508

### GMF A/S supplies bends to customer specifications



# Quality

We are ISO 9001:2008 certified and supply products labelled to ensure full traceability, together with 3.1 certificates for the materials used.

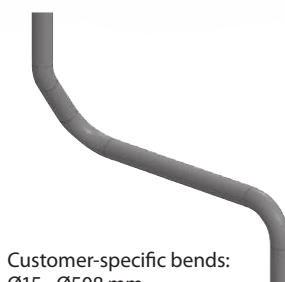
We are a quality-conscious partner, generally regarded as a leader in quality terms, but we are also able to provide that extra quality the customer requires.



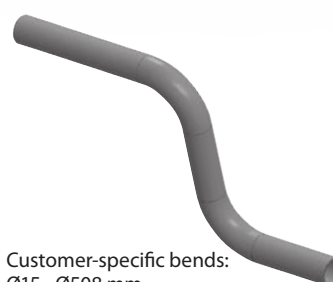
Standard branch elbows:  
Ø26.9-Ø219.1  
R2D; R2.5D or BA5  
Bend angle: 0-180°



Special branch pipes:  
Ø33.7-Ø114.3  
R 1.5D  
Bend angle: 0-180°



Customer-specific bends:  
Ø15 - Ø508 mm



Customer-specific bends:  
Ø15 - Ø508 mm

We bend pipes in dimensions from Ø15.0 - Ø508.0 mm. Material thickness ranges from 1.5 mm to 12.5 mm. As a key partner, GMF A/S is more than willing to advise its customers on their bending requirements.

We produce in steel grades to EN, ASTM, ANSI and AISI standards. Examples of current standards: EN10217-1, EN10217-2, EN10217-3, EN10217-7, EN10216-2, EN10216-3, EN10216-4, EN10216-5, EN10208-2.

Production using customer-supplied materials is performed to customer specifications. Examples of steel grades GMF A/S uses in production:

Black steel:

P235GH, P235TR1, P235TR2, P265GH, P355N, P195GH, 16Mo3, L360NB, L360MB.

Stainless steel:

EN1.4301, EN1.4307, EN1.4404, EN1.4432, EN1.4435, EN1.4541, EN1.4571, ANSI 304, ANSI 304L, ANSI 316, ANSI 316L, ANSI 316TI, Sandvik SAF.

Standard pipe		Standard bending radii		
		Spec.	Bauart 5	2,5D
DN	Diameter [ØD]	CLR	CLR	CLR
20	26,9	110		67
25	33,7	110		84
32	42,4	110		106
40	48,3	110		121
50	60,3	125		151
65	76,1		175	190
80	88,9		205	222
100	114,3		270	286
125	139,7		330	350
150	168,3		390	421
200	219,1		510	
250	273		650	
300	323,9		775	
350	355,6		850	
400	406,4		970	
500	508		1245	

Material thickness from 1.5 to 12.5 mm - in some cases up to 20 mm.  
CLR = Centre Line Radius for bend.

For list of all tooling – see [www.gmf.dk/products](http://www.gmf.dk/products).



Customer-specific  
bends:  
Ø15 - Ø508 mm



Customer-  
specific bends:  
U elbows  
Ø15 - Ø219.1



Standard flange bend:  
Ø26.9-Ø219.1  
R 2D



Our standard radii  
Ø26.9 - Ø168.3, CLR = 2.5 X diameter  
Ø219.1 - Ø508 Bauart 5

Given that we have access to an extensive range of different radii in matrices, we can supply bends to exact customer specifications.  
See the table or visit [www.gmf.dk/products](http://www.gmf.dk/products) for a complete list.

If we cannot immediately meet your requirements, we are more than happy to accommodate by designing new matrices based on your needs.

An example of a standard bend is 90° with leg lengths of 1 x 1 m; and longer when bent in dimensions from Ø273.0 mm to Ø508 mm.

We can supply bends to other radii and leg lengths, as well as bends with more than one bend, as customers require.





# 98% reduction of CO<sup>2</sup> in the production process

## - significant environmental benefits

The Danish Technological Institute has produced a report comparing the energy consumption for pipe production using cold bending as against warm bending with welding. The report is based on current data from GMF A/S, the company's knowledge of process technology and data gathered from cooperation partners and equipment suppliers.

The report has calculated how much energy (measured in kWh) is used to manufacture the two types of pipe bend.

The report compares the CO<sup>2</sup> emissions of the two manufacturing processes measured in terms of the oil consumption used to heat the process water, the consumption of electricity used in the production process and the consumption of fuel used for transport during the production process. The calculations were made on the basis of the Ø508 mm (Bauart 5) pipe dimension.

The report reveals that the CO<sup>2</sup> emissions when producing bends using cold bending of pipes of Ø508 mm dimension are 98% lower than when using warm bending with welding, resulting in large savings on all pipe sizes.

The main reasons for the significantly lower energy consumption are twofold. Firstly, cold bent pipes are not welded or heated in order to create the bend and equalise stress and, secondly, thermoformed pipes are typically transported to other factories to be welded together.

The Danish Technological Institute is interested in disseminating the socioeconomic and environmental ramifications underlying the conclusions of the report.

*"With rising energy costs and increasing efforts to reduce CO<sup>2</sup> emissions, GMF's production methods are beneficial on every level," explains Asger Thomsen, senior consultant at the Danish Technological Institute, adding:*

*"Of course, the savings are modest from an overall perspective, but these are processes that run every single day. GMF A/S is therefore a good example of major potential savings that can be achieved over the long term in production processes. And we should all be thinking in exactly these terms."*

- excellent reliability of supply - short delivery times
- cold mandrel bending from Ø15 - Ø508 mm
- 20 years' experience in pipe bending
- highly-qualified staff
- high quality - full traceability
- extensive range of tooling
- dedicated workshop
- excellent flexibility



**GMF A/S**

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