m³ plasma™. The third-generation plasma system.

VERSATILE. ECONOMICAL. EASY TO OPERATE.

m³ plasma™.

Your new formula for precision and productivity.

ESAB now makes cutting and marking metal easier for you than ever before.

m³ plasma™. The innovative high-performance system for the efficient use of modern plasma technology.

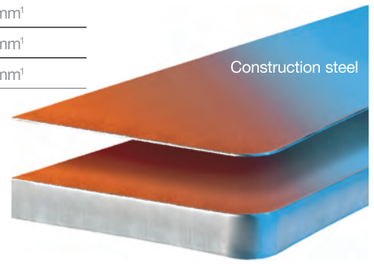
m³ plasma™ raises your productivity with little effort, while its expanded functionality makes you more flexible. What is more, m³ plasma™ offers ideal conditions for the automation of your cutting and marking processes.

MATERIALS AND THICKNESSES

CONSTRUCTION STEEL

Current source	Cutting current	Material thickness
m³ plasma™ 201	30 - 200 Ampere	1 - 32 mm[1]
m³ plasma™ 360	30 - 360 Ampere	1 - 40 mm[1]
m³ plasma™ 450	30 - 450 Ampere	1 - 50 mm[1]
m³ plasma™ 601	30 - 600 Ampere	1 - 50 mm[1]

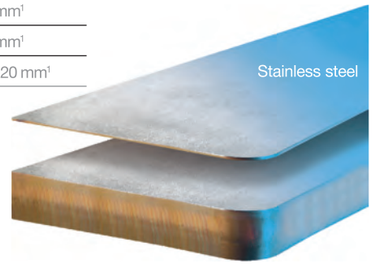
(Piercing and cutting construction steel with O^2 at 450 A)



STAINLESS STEEL

Current source	Cutting current	Material thickness
m³ plasma™ 201	30 - 200 Ampere	1 - 32 mm[1]
m³ plasma™ 360	30 - 360 Ampere	1 - 40 mm[1]
m³ plasma™ 450	30 - 450 Ampere	1 - 50 mm[1]
m³ plasma™ 601	30 - 600 Ampere	Up to 120 mm[1]

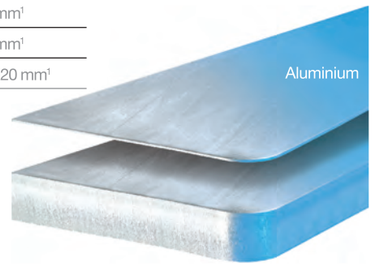
(Piercing and cutting up to 70 mm with gas mixture H35 { 65% argon + 35 % hydrogen } at 600 A, Cutting 120 mm stainless steel is edge cutting ONLY)



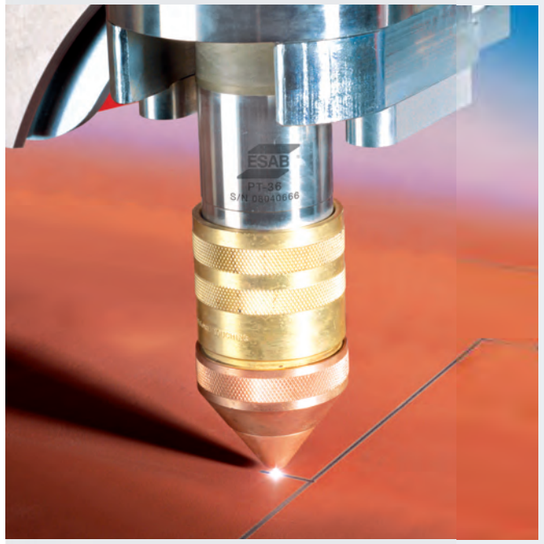
ALUMINIUM

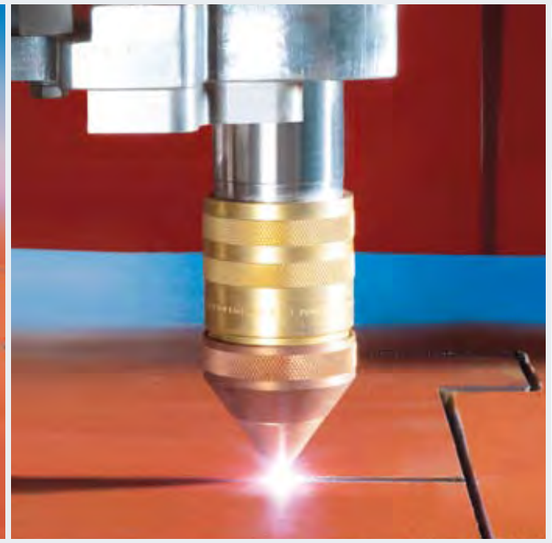
Current source	Cutting current	Material thickness
m³ plasma™ 201	30 - 200 Ampere	1 - 32 mm[1]
m³ plasma™ 360	30 - 360 Ampere	1 - 40 mm[1]
m³ plasma™ 450	30 - 450 Ampere	1 - 50 mm[1]
m³ plasma™ 601	30 - 600 Ampere	Up to 120 mm[1]

(Piercing and cutting up to 70 mm with gas mixture H35 { 65% argon + 35 % hydrogen } at 600 A, Cutting 120 mm aluminium is edge cutting ONLY)



[1] Recommended cutting area in production – including hole piercing





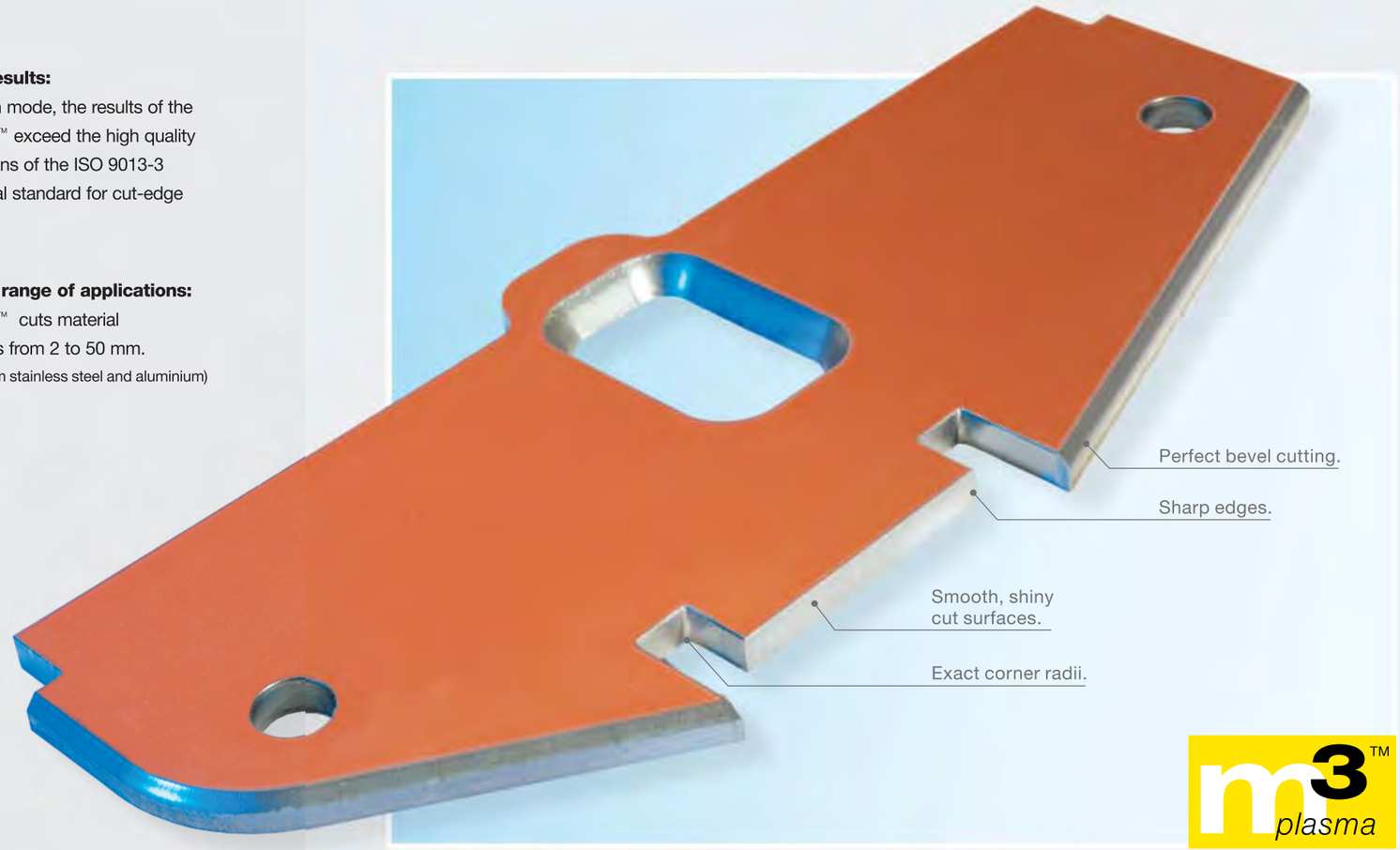
Easy marking and labelling:
- Label without changing tools.
- Variable line thickness and depth.
- Speed up to 20 m/min.

Highly accurate precision cutting:
- Flat cut surfaces.
- Sharp edges.
- Virtually no burr formation.

Perfect bevel cutting:
- Weld bevel angle from 0 degrees to +/- 45 degrees.
- Particularly precise due to innovative torch geometry.

Brilliant results:
In precision mode, the results of the m³ plasma™ exceed the high quality specifications of the ISO 9013-3 international standard for cut-edge quality.

Wide range of applications:
m³ plasma™ cuts material thicknesses from 2 to 50 mm.
(up to 120 mm stainless steel and aluminium)



m³ plasma™

The PT-36 torch.

The all-rounder for m³ plasma™.

The innovative PT-36 plasma torch combines all the advantages of m³ plasma™ with specific power development.

Full performance, little effort: the PT-36 masters everything perfectly. With this plasma torch you can handle workpiece marking and labelling, all perpendicular cuts and even bevel cutting without time-consuming tool changes. That means uninterrupted productivity.

But now with the PT-36 you can also optimise your logistics. It needs far fewer wear parts than similar plasma torches, so your torch parts inventory becomes clearer and handling becomes easier, saving you time and expense. Another plus for your balance sheet!

01
Torch body
Cutting current: 10 A - 600 A

02
Gas annulus
Cutting current: 10 A - 600 A

03
Electrode holder
Cutting current: 10 A - 600 A

04
Electrode
Cutting current: 50 A / 450 A / 600 A

05
Nozzle
Cutting current: 30 A - 600 A

06
Gas distributor ring
Cutting current: 10 A - 600 A

07
Nozzle cap
Cutting current: 10 A - 600 A

08
Protective nozzle cap
Cutting current: 30 A - 600 A

09
Protective cap attachment
Cutting current: 10 A - 600 A

CUTTING AREA
2 mm - 60 mm
CONSTRUCTION STEEL, STAINLESS STEEL, ALUMINIUM

New simplicity:
ESAB has revolutionised both the range of uses and the wear and spare parts concept of the plasma torch. The result: in normal operation, the PT-36 can manage with just 18 wear parts and 9 spares.

Which means:
Reduced storage expense and significantly quicker configuration of the unit for the next large task.

PICTURE	WEAR PART	QUANTITY
04	Electrode	3
05	Nozzle	10
08	Protective nozzle cap	5
	Total	**18**

PICTURE	WEAR PART	QUANTITY
01	Torch body	1
02	Gas annulus	3
03	Electrode holder	1
06	Gas distributor ring	2
07	Nozzle cap	1
09	Protective cap attachment	1
	Total	**9**

01
Torch body

02
Gas annulus

03
Electrode holder with O-ring

04
Clamping piece

05
Clamping nut

06
Electrode

07
Nozzle with O-ring

08
Nozzle cap

09
Protective nozzle cap

CUTTING AREA
40 mm - 150 mm
STAINLESS STEEL, ALUMINIUM

A specialist in thick blanks:
ESAB has developed special wear and spare parts for working with particularly thick blanks. So m³ plasma™ even cuts material thicknesses of up to 150 mm precisely and quickly.

PICTURE	WEAR PART	QUANTITY
06	Electrode	1
07	Nozzle with O-ring	1
09	Protective nozzle cap	1
	Total	**3**

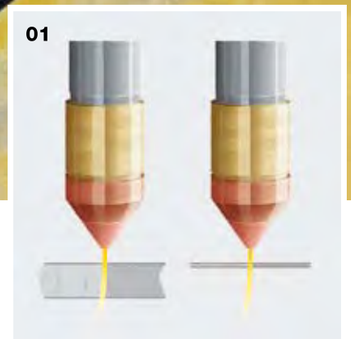
PICTURE	WEAR PART	QUANTITY
01	Torch body	1
02	Gas annulus	1
03	Electrode holder with O-ring	1
04	Clamping piece	1
05	Clamping nut	1
08	Nozzle cap	1
	Total	**6**

Form and function combined.

The innovative torch design.

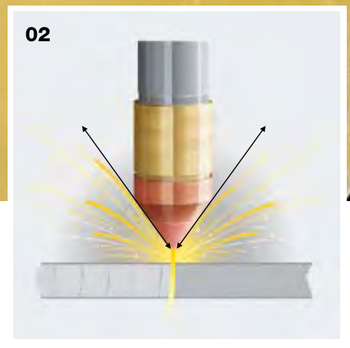
Smooth and slender, with no corners or edges. The PT-36 plasma torch cuts a fine figure.

Nothing disturbs the movement, everything sits perfectly. With the PT-36, new geometry makes for faultless machine characteristics, outstanding precision in bevel cutting and a substantially longer life span.



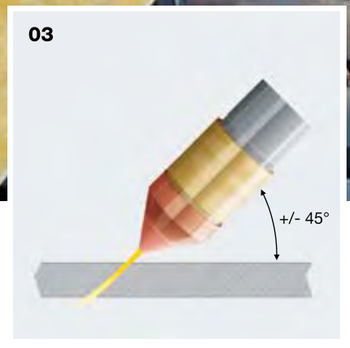
01 » Wide range of applications

Thanks to the controlled power input, the PT-36 cuts with ease in the material thickness range from 2 to 60 mm.



02 » Longer life span

The optimised geometry offers flying sparks less contact surface.
Another advantage: less wear part consumption.



03 » Perfect bevel cutting

With its slim nozzle head the PT-36 always stays close to the workpiece, even at large angles of inclination, producing faultless welding bevels from 0 degrees to +/- 45 degrees.

m3 plasma™

Focused plasma energy.

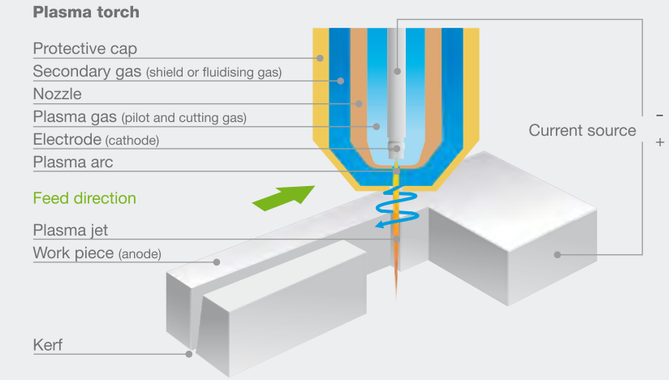
Shield gas technology brings more power and precision.

ESAB uses a ground-breaking process as a driving force for high performance.

The principle:
A secondary gas is used alongside the plasma gas, circulating around the arc and providing it with a protective, stabilising shell.

The result:
With the exceptionally fine, accurate arc, thickness is substantially higher in comparison to conventional plasma processes, while angular deviations are visibly reduced.

The advantages:
- Higher cutting speeds
- More precise cut edges
- Brilliant cut surfaces
- Underwater cutting possible
- Marking and labelling



The right mixture.

With these gases, m³ plasma™ can handle any cutting task.

Gas type	Construction steel	Stainless steel / Aluminium
Plasma gas / pilot gas:	nitrogen (N_2) compressed air (Air)	nitrogen (N_2) or compressed air (Air)
Plasma gas / cutting gas:	oxygen (O_2)	nitrogen (N_2) argon / hydrogen (Ar / H_2)
Secondary gas / shield gas / fluidising gas:	oxygen (O_2) nitrogen (N_2) compressed air (Air)	nitrogen (N_2) methane (CH_4)
Marking gas:	argon (Ar)	argon (Ar)

Note:
The combinations indicated here for plasma and secondary gases are guidelines. According to the cutting task, different gas combinations may be required.

01

02

03

The components of your success.

m³ plasma™ for an integrated cutting process.

ESAB offers a seamless range of services for plasma cutting.

As a system partner to industry, ESAB is familiar with your specific requirements. What you want are complete solutions from one source, suitable for integration into your existing processes. So, all the components from ESAB work seamlessly with m³ plasma™ to aid the realisation of an automated, rational production process.

01 » VISION control

For convenient automation.

- Controls all machine processes.
- Easy programming.
- Ergonomic operation.

02 » Plasma control

For highest process quality.

- Innovative gas flow control.
- High precision through mass flow control.
- Fast change of operating mode.

03 » Current source with water cooling unit

For superior power supply.

- Accurately controllable current delivery.
- Wide range of applications.
- High efficiency (> 90 %).

m3™ plasma

The choice is yours.

m^3 plasma™ adapts to your specifications.

Four different quality levels, four ways to good cutting, always the right result.

Decide for yourself which edges need to be cut with high precision and which should be made with energy-saving bulk cutting. m^3 plasma™ even allows you to switch between the quality modes while processes are running. So the system always works just as needed and as economically as possible.

Cutting to suit the material, saving resources: m^3 plasma™ adapts itself.

QUALITY MODES

01 » Precision	02 » Production	03 » Cross cut	04 » R2 NEW!
For highly accurate precision cutting. Result: Meets ISO 9013-3 or higher. Flat cut surfaces. Sharp edges on top and bottom. Virtually no burr formation (with appropriate material).	The sound compromise between economy and cut quality. Result: Meets ISO 9013-3 or higher. Flat cut surfaces. Sharp edges on top and bottom. Virtually no burr formation (with appropriate material).	For economical bulk cutting. Result: More steeply bevelled edges. Rounded top edges. Slight burr formation. Highest cutting speed.	The special mode for round top edges. Result: Meets the specifications of the International Maritime Organization (IMO) for optimum varnishability. Top edge radiusing: accurate radius of 2 mm.

TECHNICAL DATA

Current source	m^3 plasma™ 201	m^3 plasma™ 360	m^3 plasma™ 450	m^3 plasma™ 601
Rated output power	32 kW	72 kW	90 kW	120 kW
Output current (Marking):	10 A - 36 A	10 A - 36 A	10 A - 100 A	10 A - 100 A
Output current (Cutting):	30 A - 200 A	30 A - 360 A	30 A - 450 A	30 A - 600 A
Line connections:	400 VAC, 50/60 Hz	400 VAC, 50/60 Hz	400 VAC, 50/60 Hz	400 VAC, 50/60 Hz
Line fuse:	3 x 100 A	3 x 150 A	3 x 200 A	3 x 250 A
Connection power:	35.5 kW (39.5 kVA)	82.5 kW (91.6 kVA)	99 kW (110 kVA)	128.4 kW (142.7 kVA)
OFF-Load voltage:	360 V, DC	360 V, DC	427 V, DC	427 V, DC
Protection class:	IP 22	IP 22	IP 22	IP 22
Dimentions / mm (W x H x D):	585 x 1,040 x 1,195	585 x 1,040 x 1,195	950 x 1,050 x 1,150	950 x 1,050 x 1,150

Plasma torch	PT-36
Cutting current:	max. 600 A
Cooling:	water-cooled
Plasma gases / Pilot gases:	nitrogen, compressed air
Plasma gases / Cutting gases:	nitrogen, compressed air, oxygen, argon / hydrogen
Secondary gases / fluidising gases:	oxygen, compressed air, nitrogen, methane
Marking gas:	argon

Cooling unit	CC-11
Line connection:	230 V, 50/60 HZ
Water:	6 l/min
Pressure:	12 bar
Dimentions / mm (W x H x D):	550 x 865 x 710

	Quality mode: 01 » Precision			Quality mode: 02 » Production		
	Current (A)	Material thickness (mm)	Cutting speed (mm/min)	Current (A)	Material thickness (mm)	Cutting speed (mm/min)
CUTTING PARAMETERS CONSTRUCTION STEEL	50	2	1,900	50	2	4,575
		3	1,550		3	3,050
		4	1,400		4	2,550
		5	1,270		5	2,160
		6	1,150			
				100	3	5,700
	100	6	2,200		4	4,575
		8	2,050		5	4,065
		10	1,850		6	3,560
		12	1,780		8	3,460
					10	1,905
	130	10	2,160		12	1,525
		12	1,905			
		15	1,400	130	3	6,100
		19	1,275		5	4,850
					6	3,800
	200	15	2,000		8	3,300
		20	1,500		10	2,800
		25	1,150		12	2,050
		30	765		15	1,525
					20	1,250
	280	20	1,900		25	500
		25	1,550			
		30	1,150	200	6	6,350
		32	1,015		8	5,100
		35	850		10	4,000
					12	3,050
	400	30	1,400		15	2,550
		32	1,250		20	1,810
		35	1,150		25	1,300
		38	1,050		30	1,000
		40	960		32	890
					35	635
					40	508
				400	5	8,000
					6	6,500
					8	5,200
					10	4,800
					12	4,150
					15	3,500
					20	3,000
					25	2,000
					30	1,500
					32	1,270
					35	1,150
CUTTING PARAMETERS STAINLESS STEEL	130	10	1,000	70	2	4,800
		12	900		3	3,300
		15	785		4	2,550
		20	675		5	1,780
		25	625		6	1,700
	200	10	1,650	130	6	2,160
		12	1,450		8	1,650
		16	1,150		10	1,150
		20	980		12	760
		25	760		15	680
		32	560		20	6
	260	10	2,000	200	6	2,290
		12	1,700		8	2,150
		15	1,400		10	2,035
		20	1,100	220	12	1,775
		25	800		20	870
		32	625		25	760
	360	12	2,100	360	6	5,840
		20	1,100		8	4,850
		25	760		10	3,810
		32	510		12	3,175
					15	2,400
					20	1,900
					25	1,140
					32	635
				450	20	2,425
					25	1,775
					32	1,350
				600	25	1,016
					40	457
					51	305
CUTTING PARAMETERS ALUMINIUM	35	2	4,600	200	6	3,400
		3	3,000		8	3,000
					10	2,650
	50	4	3,050		12	2,160
		5	2,160		20	1,690
		6	1,900		25	1,150
					32	900
	100	6	2,100			
		8	2,000	260	6	7,620
		10	1,900		8	6,300
		12	1,300		10	5,080
					12	3,810
	200	10	2,600		15	2,540
		12	2,200		20	2,285
		20	1,700		25	1,828
		25	1,200		32	1,370
		32	890			
		35	760	600	25	2,050
		38	650		32	1,750
					40	1,500
	360	12	3,810		51	760
		15	3,300			
		20	2,200			
		22	1,900			
		25	1,550			
		32	1,150			

Note:

The cutting speeds are dependent on the material quality, gas pressure and gas combination as well as the nozzles and electrodes used.

All statements apply to m^3 plasma™ units with a PT-36 torch and integrated plasma control.

Quality mode R2:
- Round top edges for even colour application.
- Virtually no burr formation.

Top edge radiusing:
- Accurate radius of 2 mm.

Clean operating conditions.

Underwater cutting with the m³ plasma™.

A water cutting table from ESAB is also a sound basis for high-performance plasma cutting.

Even marking and labelling underwater is no problem with m³ plasma™. The PT-36 plasma torch and shield gas technology make it possible. And in many cases, underwater cutting is worthwhile as a sensible alternative or complement to dry cutting. The advantages: less noise, reduced emission of dust, aerosols and UV, lower heat impact around the cut edge. ESAB will be happy to develop an individual concept for underwater cutting with m³ plasma™ for you.

Standardised curvature.

NEW!

The special mode R2.

With R2, the m³ plasma™ offers a new quality mode for varnished components.

R2 stands for Radius 2 and meets the specifications of the International Maritime Organization for the standardised curvature of top edges. This curvature guarantees colour adhesion in the edge area. Technical modifications excepted.

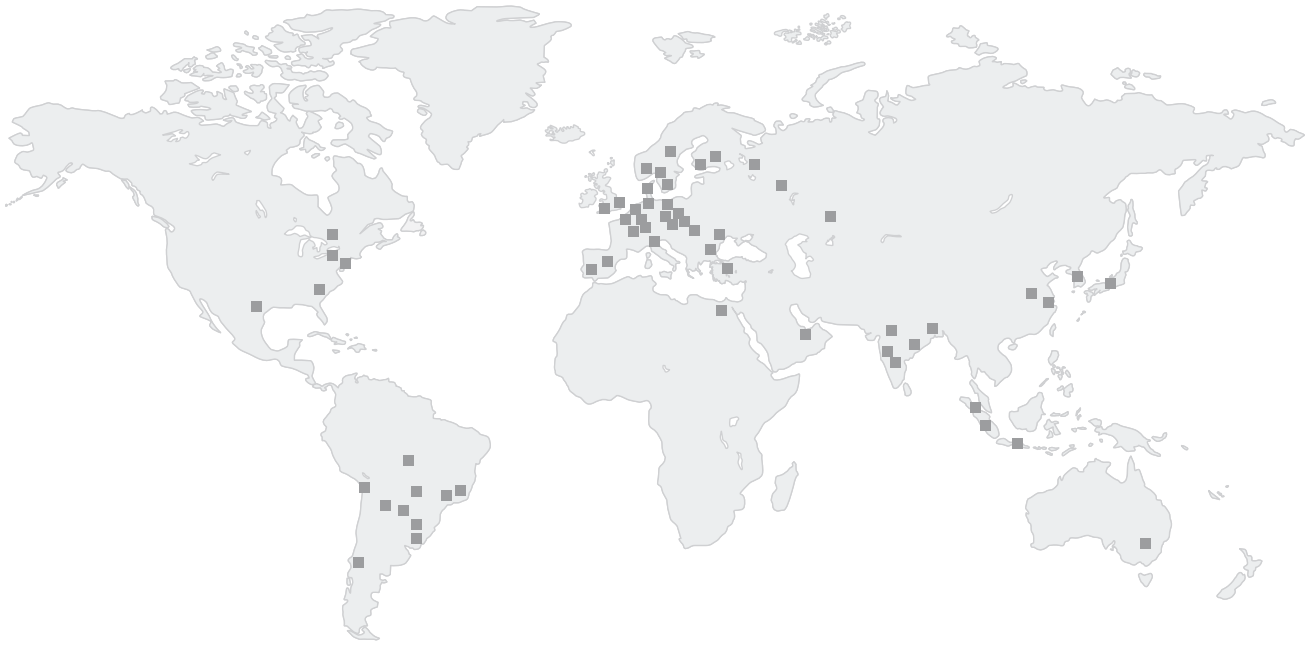
m3™ plasma

ESAB CUTTING SYSTEMS

Your partner in cutting.

Seven decades of experience and the consistent focus on the needs of our customers are the foundations for the successful and comprehensive product range of our cutting machines. In keeping with the thermal cutting processes – plasma cutting, oxy-fuel cutting and laser cutting – ESAB has developed a range of machines that efficiently combine the highest cut quality with high cutting speeds, allowing intelligent integration into automated production processes. So in many sectors, the m³ plasma™ cutting system also helps to optimise production and increase the operating efficiency of our customers.

ESAB sales and service offices worldwide



Includes manufacturing facilities of ESAB North America, a wholly owned subsidiary of Anderson Group Inc.

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