



Cutting Systems

# PRODUCT RANGE

## MESSE R CUTTING SYSTEMS

CREATING SOLUTIONS BEYOND MACHINES



THE MESSE R  
**EXPERIENCE**

# CUTTING-EDGE HOLISTIC SOLUTIONS FOR TODAY'S MANUFACTURING CHALLENGES

**We are a global solution provider for the metal working industry. Our oxyfuel, plasma and laser cutting systems are designed to enable our customers to better achieve their ambitions with high productivity, flexibility and quality products.**

Our customers and their needs are at the center of all of Messer Cutting Systems' developments. In everything we do, we aim to offer them added value. We are convinced that we can ensure this by transforming from a mere manufacturing company to a full solution provider.

From the first contact with our sales team and products through to after-sales service and from simplest machine to complex solution, we want you to experience the quality, precision, durability, reliability and innovative strength of Messer Cutting Systems. In other words: **We want you to feel the Messer Experience.**

Therefore, today, we are focusing on customer-driven innovation and 360-degree solutions going beyond the mere machine. We aim to address and support customer challenges by blending our global product portfolio of machinery, software, automation, know-how and service support into the best overall solution that our customers benefit from.



## OXYFUEL TECHNOLOGY

### PRODUCTS IN ORIGINAL MESSER QUALITY

As market leader in the field of Oxyfuel Equipment we offer a complete product range in Original-Messer-Quality with the most modern solutions for every application. Messer Quality pays off in economy and long productive lives. From the take-up point through safety devices, hoses and handles right up to the hand and machine equipment including the special nozzles: We have the perfect solution for every use case.

#### Product range:

- + Cylinder Regulators and tapping points
- + Safety devices
- + Handles and machine shafts
- + Welding, soldering and heating applications
- + Hand- and machine cutting torches
- + Nozzles
- + Accessories



## GRIFLAM HEATING TECHNOLOGY

### COMPLETE SOLUTIONS FOR ALL INDIVIDUAL HEATING TASKS

GRIFLAM heating technology includes a multitude of heating inserts and heating torches. Our individual torches are manufactured for different gases, for the required workpiece geometry and the necessary flame power. The development and manufacturing of authorised and supervised heating and hardening units belongs to the core competences.

#### Scope of supply:

- + Handles, shafts, injectors
- + Gas supply systems
- + Control systems
- + Heating inserts
- + Fork, row and ring torches
- + Ignition and monitoring equipment
- + Hardening torches
- + Accessories
- + Installation and training

# THE WHOLE WORLD OF OXYFUEL TECHNOLOGY

Our programm is oriented on the multi-faceted demands of modern practices so it offers the suitable systems for every welding, cutting and heating process. The products are divided into individual ranges according to their main application, so they deliver the best performance both individually and in combination. To complete these we also offer comprehensive systems for heating and hand equipment for steel mill applications as well as our services.

Our many years of co-operation with gas suppliers have given us a high level of competence in the use of technical gases. Experience in welding and process technology is combined with innovation, quality and reliability since 1898.

## STEEL MILL EQUIPMENT

### PARTICULARLY ROBUSTLY BUILT

Specially suitable for the demands in the steel mill and steel producing industries, scrap yards and foundries.

Comprehensive product range for all hand cutting and scarifying applications. The cutting range of heavy duty cutting torches goes up to 700 mm. A wide range of high quality flame cutting nozzles, heating nozzles and accessories round out the complete product. Suitable for: Acetylene, Propane, Methane, natural gas, MAPP®.

#### Scope of supply:

- + Heavy duty cutting torches for hand cutting and the splitting of steel scrap
- + Powder feed equipment
- + Hand scarifying torches to deal with cracks, inclusions and local defects
- + Powder hand cutting torches for high alloyed steels and cast iron
- + Powder machine cutting torches
- + Oxygen lances for hole piercing and for cutting of non-ferrous metals and slag
- + Powder distributors

# MULTI- FACED, APPRO- PRIATE, EFFICIENT



## PROZESS OPTIONS

### Oxyfuel

Despite the increasing significance of other cutting processes such as plasma and laser cutting, oxyfuel flame cutting remains a very economical process. With large material thicknesses up to 3200 mm (manual cutting) there is no alternative to flame cutting. For weld preparations it is possible to produce X, V, Y and K cuts.

#### Advantages:

- + Good cut quality
- + Smooth, vertical cut edges
- + Metallurgically perfect surface (oxidised)
- + X, V, Y and K cuts for weld preparations

Plate thickness range: 3 mm – 3200 mm



## PROZESS OPTIONS

### Plasma

Many innovations in plasma technology over the past years make possible precision cutting of Mild Steels, Stainless Steels and Aluminium. The focus of the latest developments is on improving the cutting of holes as well as the extension of consumable lives which give reduced reworking and lower operating costs.

#### Advantages:

- + Very good cut quality
- + Moderate heat input
- + Low hardening of the cut face
- + High cutting speeds

Plate thickness range:  
Mild Steel: 1 mm – 80 mm  
Stainless Steel: 3 mm – 160 mm



## PROZESS OPTIONS

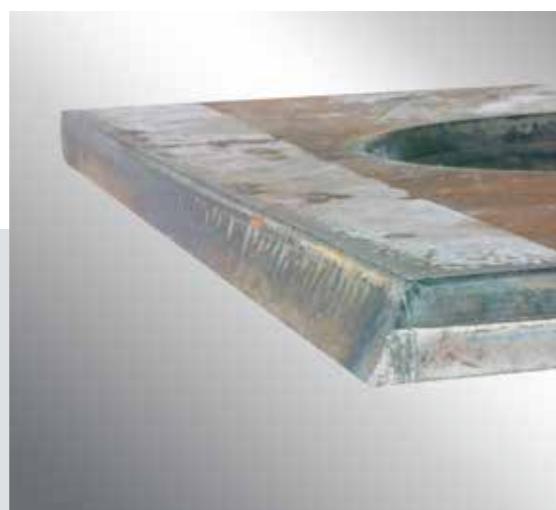
### Laser

Laser cutting is the royal class of cutting processes for the metalworking industry. If you require cuts with the highest quality and the best possible accuracy, then laser cutting with its straight cut edges, narrow cutting kerf width and the lowest heat input is the right technology.

#### Advantages:

- + Very good cut quality
- + Low heat input
- + Tightest component tolerances
- + Reduced maintenance
- + Increased efficiency through material handling

Plate thickness range:  
Mild Steel: 40 mm ( $O_2$ )  
Stainless Steel: 40 mm ( $N_2$ , Mixed gas)





#### DROP & CUT

## MetalMaster 2.0

**Special cutting system for precision plasma processes. Oxyfuel optional.**

Dual side longitudinal drives and precision linear guides guarantee high cutting quality and consistency. The plate support table, which is integrated into the system, is divided into a number of sections for efficient fume extraction even with a smaller fan/filter unit.

The highly dynamic performance of the machine is achieved through low weight with high design rigidity.

## Technical Data

- + Working widths: up to 2.500 mm
- + Travel speeds: up to 35 m/min
- + CNC controlled Z axis with the torch lifter SL100
- + Specialised for the latest precision plasma processes
- + Dimensional tolerances to DIN EN 28206
- + Simple installation drop & cut
- + Cutting processes: Oxyfuel, dry plasma
- + Marking processes: Punch marking, plasma marking



#### EASY OPERATION

## MultiTherm® Eco

**Fast and efficient.**

Compact design, simple operation and high flexibility – that is the MultiTherm® Eco. The machine is conceived for daily work in a standard cutting shop. The high level of automation, simple set-up and operation enable high productivity and the production of high quality parts – quickly and economically.

The symmetrical wheel-housings and the parking space for unused torches over them optimise the working width in the narrowest spaces. The electrical cabinet is positioned over the wheel-housing so it is not exposed to thermal radiation from the cut plate. It is accessible from the side to simplify maintenance and service.

## Technical Data

- + Working Widths: up to 3.000 mm\*
- + Travel Speeds: up to 20 m/min
- + Cutting processes: Oxyfuel, dry plasma
- + Marking processes: Punch marking, plasma marking

\*Depending upon machine equipment

Model	3015	4020	4025	6020	6025	8020	8025
Working width	1500	2000	2500	2000	2500	2000	2500
Overall width	3200	3900	4400	3900	4400	3900	4400
Working length	3000	4000	4000	8000	8000	8000	8000
Overall length	7600	8900	8900	10900	10900	12900	12900
Table height	1000	1000	1000	1000	1000	1000	1000

All values in mm

Track gauge	2600	3100	3600	4000
Arbeitsbreite	1500	2000	2500	3000
Working width	4070	4070	5070	5070
Length	1500	1500	1500	1500
Height	1980	1980	1980	1980
Track height	500	500	500	500

All values in mm



PRODUCTIVITY REDEFINED

## ELEMENT

**Operate safely. Stay flexible.**

The demands on your production are continually increasing. As a solution provider, we therefore focus entirely on your needs. Continually providing increased efficiency, reliability and quality: we know what today's metal processing industry requires from you – with our new, flexible ELEMENT platform we are already setting the course for a successful future today.

Apart from the high level of productivity and precision you have come to expect from us, this solution offers customised configuration options and updates, enabling you to respond to future requirements. This gives you a real competitive edge – helping you to stay ahead in the long run.

## Technical Data

- + Cutting width 1.600 mm to 4.100 mm\*
- + Cutting length up to 47.000 mm
- + Cuts material up to 300 mm
- + Mild Steel, Stainless Steel, Aluminium
- + Positioning speeds up to 50 m/min
- + Reinforced steel weldment construction with high rigidity beam
- + Enclosed powertrack in both axes in standard
- + Floo or H-Beam installation
- + Up to six torch stations

\*Depending upon machine equipment



VERSATILE AND EFFICIENT

## MultiTherm®

**Always the ideal system for your production.**

Whether plasma (straight or bevel), multi-torch oxyfuel cutting, laser, marking, drilling or a combination of all is your requirement, the MultiTherm® is the machine for you. High power drives for speeds up to 50 m/min enable high positioning and cutting speeds even on tight contours. The effective working width is used to the maximum thanks to parking space for heads over the wheel-housing. Multiple torch operation for high productivity is, of course, possible with oxyfuel, plasma and laser operation.

## Technische Daten

- + Working Widths: up to 4.000 mm\*
- + Travel Speeds: up to 50 m/min
- + Working Length: 47.000 mm
- + Cutting processes: oxyfuel, dry plasma, fibre laser, UWP
- + Equipment options: Oxyfuel, plasma and laser process, marking, drilling
- + Marking processes: punch marking, plasma marking, needle marker OmniScript, InkJet, laser marker
- + Process optimisation
- + Messer Hole Technology

\*Depending upon machine equipment

	2600	3100	3600	4000	4600	5000	6000
Track gauge	2600	3100	3600	4000	4600	5000	6000
Table width	2100	2600	3100	3600	4100	5100	5600
Overall width	5700	6200	6700	7100	7700	8100	9100
Working width	4700	5200	5700	6100	6700	7100	8100

All values in mm

Track gauge	2600	3100	3600	4000	4600	5000
Working width	1500	2000	2500	3000	3500	4000
Overall width	4070	4070	5070	5070	6070	6070
Length	1940	1940	1940	1940	1940	1940
Height	1980	1980	1980	1980	1980	1980
Track height	500	500	500	500	500	500

All values in mm



#### MACHINE FOR SPECIAL TASKS

## OmniMat®

### Ideal for large working areas with oxyfuel and plasma.

This machine has been robustly built to guide even the heaviest units accurately. The CNC controlled cutting machine with a high load gantry construction, dual sided longitudinal drives and precision machined guide sections offers you high cutting accuracy and shape consistency even in 24 hour continuous operation. Whether with oxyfuel, underwater or dry plasma, whether vertical cuts, bevels or with drilling unit, the OmniMat® is the ideal solution for the toughest conditions.

## Technical Data

- + Working Widths up to 7.800 mm\*
- + Maximum number of torches on the machine: 18 (with 24" screen)
- + Travel speeds: up to 50 m/min
- + Automatic hole piercing up to 130 mm
- + Optional: footplate travelling with the machine and much more
- + Process optimisation
- + Messer Hole Technology
- + Marking processes: punch marking, plasma marking, needle marker OmniScript, InkJet, laser marker

\*Depending upon machine equipment



#### POWERFUL, DYNAMIC AND PRECISE

## PowerBlade®

### Fiber laser cutting system for large area processing.

With the modern fibre laser technology, extremely powerful drives, precise linear guides in both longitudinal and transverse directions and a multifaceted bevel head, the PowerBlade® is equipped for a wide range of applications. As well as vertical cuts, the widest range of bevel cuts can be combined in one part, for example to produce optimum weld seam preparations – and all that in one operation.

- + Cutting system with fibre laser
- + Low adjustment and maintenance costs
- + Low energy consumption, low running costs
- + Laser class 1 because of housing
- + Extremely simple operation
- + Magnetic holder to protect the cutting head
- + Multiple cameras for monitoring the machine and process on screen
- + Infinitely rotating bevel head
- + Second vertical head (optional)
- + On request: combination with plasma and drilling head

Track Gauge	4000	4600	5000	5600	6000	6500	7000	7500	8000	8300	8800
Working width	3000	3600	4000	4600	5000	5500	6000	6500	7000	7300	7800
Total width	4935	55350	5935	6535	6935	7435	7935	8435	8935	9235	9735
Length	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940	1940
Height	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Track height	500	500	500	500	500	500	500	500	500	500	500

Track gauge	4200	5000	6000	6500
Working width	2600	3200	4200	5150
Maximum speed*	140 m/min	140 m/min	140 m/min	140 m/min
Acceleration up to	7 m/s <sup>2</sup>	7 m/s <sup>2</sup>	7 m/s <sup>2</sup>	7 m/s <sup>2</sup>
Laser power	optional 2 – 6 kW			

# SPECIAL PORTAL MACHINES PRECISION BY THE KILOMETRE



PRODUCTIVITY REDEFINED

## ELEMENT L

### State-of-the-art laser technology.

#### Maximum productivity.

Whether it is rapidly increasing laser powers, different laser beam profiles or even new cutting gases: Today's laser machines must be able to follow current trends. Innovation is needed as applications must become more effective and transparent. In addition, the increasing shortage of skilled workers is pushing for plants to become more self-sufficient. One machine operator alone has to be able to supervise several machines.

Automation of nozzle change material supply and removal and continuous data exchange or reconciliation across the entire production flow are the prerequisites that were at the forefront of the ELEMENT L's development. It scores with a remarkably high dynamic, latest laser technology and the ability to produce XXL sheets to process economically.

## Technical Data

- + Working width 1,600 to 5,100 mm\*
- + Working length up to 25,000 mm
- + Sheet thickness up to 40 mm possible
- + Mild Steel, Stainless Steel, Aluminium
- + Positioning speeds up to 140 m/min
- + Up to six torch stations (max. 2 laser)
- + Automatic nozzle changer (LNC)
- + Marking systems: Plasma, inkjet and needle marker

\*Depending upon machine equipment



Just as varied as our product range are the tasks we are set by the different branches of industry. We not only supply you with cutting machines with the latest technology and high reliability, but also offer know-how, support in application and design, engineering and training, e.g. in the economical use of CNC techniques. Special portal machines are used, for example in shipbuilding and the manufacture of wind turbine towers.

Track gauge	2600	3000	3300	3600	4000	4600	5000	6000
Maximum table width	2100	2600	2600	3100	3600	4100	4600	5600
Machine width	3833	4233	4533	4833	5233	5833	6233	7233
Overall width	4333	4733	5033	5333	5733	6333	6733	7733
Laser power	up tp 20 kW							

All values in mm





#### EQUIPMENT AND TOOLS

## ALFA Oxyfuel Torch

With many well thought through features and possibilities, our ALFA torch raises flame cutting to a completely new level. Thus, for example, you can change the nozzles with no tools which eliminates the risk of misaligning the torch and dramatically reduces set-up times. The cap can be easily unscrewed, releasing the nozzle which can then be readily checked or replaced.

Additionally you can use material more efficiently as the ALFA can cut effectively to the edge of the plate and along it.

What is more, the torch incorporates many features which are external on other torches, e.g. height sensing. Complete integration removes the need for additional cables and sensing rings – not to mention changing the latter for different material thicknesses and for wear.



#### EQUIPMENT AND TOOLS

## Oxyfuel Bevel Cutting

Bevel cutting demands exact knowledge of the machine and the cutting processes. Corners, lead-ins and run-outs must be cut with special cycles to achieve the quality required. Bevel cutting makes high demands on the programming. Special additional functions are required to set up the devices for bevel cutting perfectly.

At Messer Cutting Systems you will find a large selection of triple torch systems, all perfectly suited for your cutting applications. You can choose between manual or automatic systems. The automatic systems run completely autonomously without any manual intervention.

I/K/V/X and Y bevels are possible. Material thicknesses up to 150 mm can be cut vertically, up to 80 mm with bevels.



#### EQUIPMENT AND TOOLS

## Strip Cutting

The strip cutting unit has been specially designed for cutting shops who have many strips to cut. It can be interchangeably installed on a standard cutting machine. It is possible to cut two strips with widths of 90 up to 180 mm or one strip with widths of 180 up to 360 mm with one head. Height sensing is made by the centre torch which

is connected to the SensoMat® ALFA . Multiple strip cutting heads can be combined for simultaneous cutting.



#### EQUIPMENT AND TOOLS

## HyCut

The history of oxyfuel technology goes back more than a century. To this day, it remains an indispensable part of established application areas such as oxyfuel flame cutting, and heating and straightening, as well as brazing and soldering and flame spraying or glass processing. The field of oxyfuel technology is currently dominated by hydrocarbon fuel gases such as acetylene, propane and natural gas.

But in view of increasingly limited natural resources and the need to manage industrial production as sustainably as possible, hydrogen offers an effective fuel gas alternative.

In view of hydrogen's unique properties, special burners and nozzles were developed. They make it possible to adjust the HyCut flame for any application – in automated or manual operation.

**FEATURES**

- + Fast replacement of nozzles with no tools and no misalignment of the torch
- + Better material utilisation through optimum sensing and cutting right up to the plate edge
- + Fully integrated height sensing



**FEATURES**

- + Infinite rotation of the head about its own axis
- + Interpolation of the angles (Change on the fly) from minimum to maximum angle during cutting
- + Positive and negative bevel angles in one part possible



**FEATURES**

- + Two strips from 90 – 180 mm wide
- + One strip from 180 – 360 mm
- + Simultaneous use of multiple strip-cutting heads



**FEATURES**

- + More environmental protection
- + Improved working safety
- + Measurable economy
- + Highest quality





#### EQUIPMENT AND TOOLS

## Bevel-S

Accurate and repeatable cut parts are created with this unique design that does not require movement of the entire machine. The plasma torch can therefore tilt very quickly, resulting in maximum plate utilisation.

With only two axes required to tilt the torch in our industry-proven skew axis design, precision cutting of small holes to the most complex bevel contours is possible.

Collision protection, a simple pneumatic torch lead management system and a few recent enhancements ensure that production requirements are easily achieved.



#### EQUIPMENT AND TOOLS

## Skew Rotator Infinity

With its infinitely continuous rotation, the Skew Rotator Infinity makes possible precise bevel cuts on almost any contour shape. In bevel mode of the machine the control regulates cutting current and nozzle stand-off with data from the part program.

The system enables the cutting of weld preparations but also of cutting blade bevels, e.g. for earth moving equipment.



#### EQUIPMENT AND TOOLS

## Messer Hole Technology

Messer Hole Technology stands for the precise cutting of small holes, narrow stitches, and fine internal contours. The cutting technology for unalloyed steels ensures a significantly better hole quality than could previously be achieved with plasma cutting. With it, holes with a diameter/thickness ratio of 1:1 can be cut with a high cylindricality and contour faithfulness. The cutting process takes place automatically with no operator intervention.

The Messer machine and software technology supports the technologies Contour Cut (CC) from Kjellberg as well as True Hole from Hypertherm.



#### EQUIPMENT AND TOOLS

## PTC500 Pipe Cutting System

With the PTC500, Messer Cutting Systems offers a pipe cutting system for its OmniMat® and Multi-Therm® ranges of machines. The core is the offline software which makes it possible to make bevel cuts on pipes. Using a special postprocessor, it gives the optimum cutting data for pipe processing. Many geometry variations for the cutting geometry on the pipe are possible with it. The available cutting process is plasma.

The central axis of the pipe can be variably adjusted with a manual setting of both the pipe support carriages and the driven pipe carriage. An internal extraction through the pipe is an integral part of the system.

**FEATURES**

- + +/- 45° bevel angles
- + A, V, Y, X and K weld profiles
- + Interpolation of the bevel angle
- + Plow bolt and countersink holes

**FEATURES**

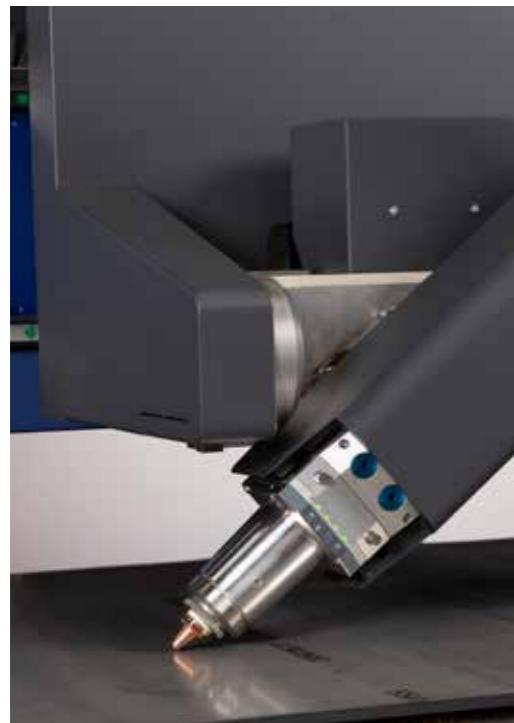
- + AC drive for high performance
- + High flexibility and productivity
- + Unlimited C axis rotation
- + No bulky arc segments which could lead to collisions or get in the way

**FEATURES**

- + Good cut quality
- + Reduction of reworking
- + Produces bolt holes with high quality
- + Reduces costs, increases productivity

**FEATURES**

- + For round pipes up to a diameter of 500 mm
- + Pipes can be cut with a plasma torch perpendicular to the pipe surface with the pipe axis rotating or
- + Using a plasma bevel unit for weld preparations of up to 52°
- + Maximum cutting speed on pipe 4000 mm/min



#### EQUIPMENT AND TOOLS

## Laser bevels with fibre laser

The Bevel-U bevel unit, specially developed for the laser process, enables bevels in the workpiece between -50° and 50°. The bevel angle is continuously adjusted during the laser cutting process. Edge shapes such as I, V, Y, X, and K are possible for a subsequent welding process of the workpieces.

The actual cutting angles depend on the material type, thickness, and bevel type such as AS or DS. With this unique design, precise and repeatable bevel parts can be produced. Consistent quality after nozzle changes is ensured by an automatic test and calibration routine. The design also includes magnetic collision protection for the cutting head and a manual control panel for all drives to perform adjustments directly on the machine.



#### EQUIPMENT AND TOOLS

## Laser Nozzle Control (LNC)

The Laser Nozzle Control (LNC) is the solution to operate a laser cutting machine with maximum processing quality and productivity for any material, thickness and process as well as to achieve autonomous operation. The operator does not even need to be present, the machine does it itself.

Before each job, it checks whether all necessary nozzles are present in the station. To ensure maximum process reliability, the nozzle quality is regularly checked, cleaned and replaced if necessary, e.g. in the event of a defect or if a different nozzle is required for a different sheet thickness.

In addition, the calibration of the nozzle height and centering of the nozzle jet ensure reliable cut quality and shortened setup times.

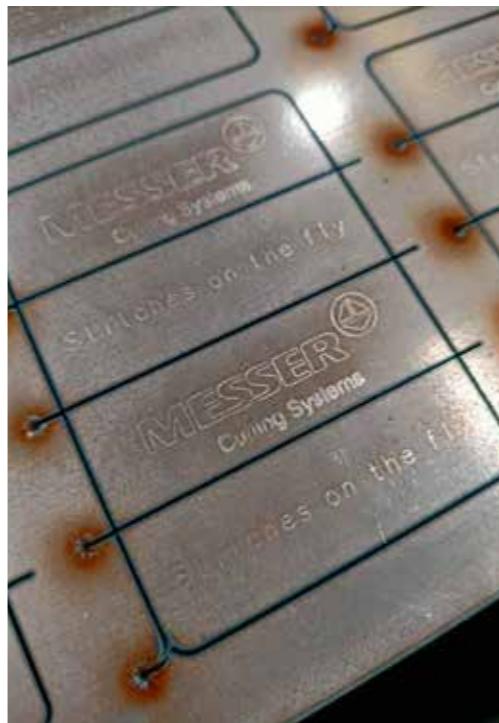
#### FEATURES

- + With bevel angle from 50 to +50°
- + YDS, YAS, K with land height from 1.5 mm for automated robot welding as well as V and X cuts
- + Variable bevels for developments



#### FEATURES

- + Automation of set-up operations
- + Prevents machine downtime
- + Shortened set-up times before and during the cutting process
- + Planning reliability and optimization



#### EQUIPMENT AND TOOLS

## Laser Marking

For various applications and subsequent processes lasting markings on different material surfaces are essential. These markings are used in different branches of industry, whether for the labelling, identification, badging, or traceability. Imprinting codes at a fixed position requires high flexibility to ensure legibility.

This is where laser marking comes into play using a pulsed fibre laser with a 100 nanosecond pulse length. By removing the surface marking can even be achieved on difficult metal surfaces.

#### FEATURES

- + Lasting marking even on critical surfaces
- + Almost maintenance free due to very long component lives
- + Simple to use and flexible application
- + No consumables
- + For applying lines, letters, numbers, logos, bar codes, QR codes



#### EQUIPMENT AND TOOLS

## Gas Mixer

Tailor-made mixtures for high-pressure laser cutting:

Modern cutting gas mixers are characterized by their dynamic operation and by their ability to rapidly, and at the same time optimally, adapt the mixture to the respective cutting task.

And this is exactly the case with the mixer that we have introduced: Equipped with a modern "mass flow controller" (MFC), it creates the conditions for ideal cutting results and increase the productivity of the lasers used.



#### FEATURES

- + Wide output ranges from 20 to 125 Nm<sup>3</sup>/h, at 20-35 bar operating pressure
- + High process reliability
- + Better cutting results, in particular due to the reduced cutting burr with medium to thick material (25-66%)
- + Less rework



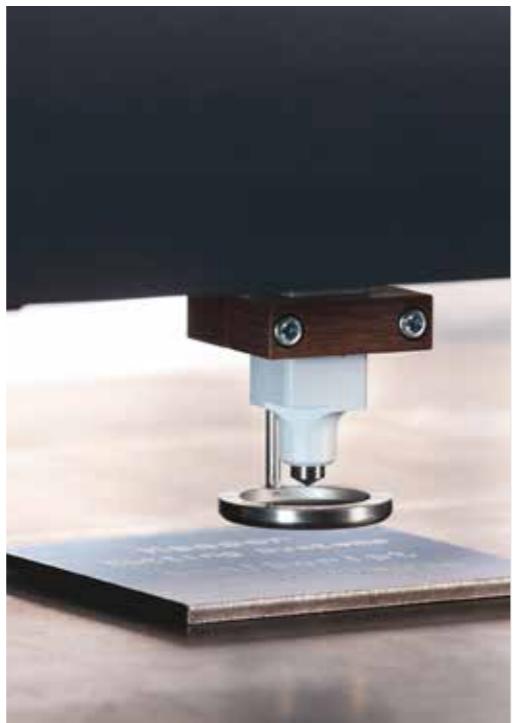
#### EQUIPMENT AND TOOLS

## Inkjet Marker

Parts often need non-permanent marking for secondary operations such as layout lines or simple part identification as they move through production. The Inkjet Marker produces markings that do not damage the plate and are not visible after painting.

Production does not slow down for marking as the marker creates text at speeds of up to 17 characters per second. Available with 7 or 16 nozzles.

Black ink only systems satisfy most requirements while optional hardware can be used with pigmented ink to create higher contrast results for some applications.



#### EQUIPMENT AND TOOLS

## Pin Marker

For applications which require a more permanent mark, the Pin Marker uses a vibrating engraving needle to create easily legible characters or layout lines.

In just a few seconds, the robust and low-maintenance marker can create text as small as 10 mm.

The results are visible on a variety of materials, including primed, rusted or mill scale plate. In some cases, the mark may still be visible after painting.



#### EQUIPMENT AND TOOLS

## HF Punch

The unit produces clear lines and punch marks for drill points, contours and letters on plates surfaces.

For drilling it offers a centre point as start point. The HF punch even marks through rusty surfaces and mill scale.



#### EQUIPMENT AND TOOLS

## Plasma Marking

Plasma marking is suitable for engraving lines, contours and letters onto material surfaces.

The plasma marking unit melts the material surface and allows precise and reliable markings with line widths, depending upon the application, between 0.5 and 1.5 mm.

With variable output power and dual gas for marking and punching you can achieve permanent markings on Stainless Steel, Mild Steel and Aluminium.

#### FEATURES

- + Dye-based ink MEK (Methyl Ethyl Ketone)
- + Dries in 3-5 seconds
- + Will not wipe off with water
- + Standard text height at 9, 12, 18, 27 mm
- + Optional 45 and 67 mm text



#### FEATURES

- + Permanently visible lines, contours and characters
- + Clear, physical markings that cannot be easily removed
- + Variable marking depth



#### FEATURES

- + Clear lines and punch points for drilling, contours and letters
- + Even marks through rusty surfaces and mill scale
- + Permanent marking
- + Marking speed: max. 6 m/min (for lines)



#### FEATURES

- + Low noise
- + Variable marking depth — also suitable for marking through mill scale
- + Precise marking with line widths from 0.5 to 1.5 mm
- + High marking speeds up to 20 m/min





## EQUIPMENT AND TOOLS

### Drilling, Deep Hole Drilling, Thread Cutting

The drilling unit is used when high accuracy of the holes is required, the hole diameter is less than the material thickness or the number of thermal hole piercings has to be reduced. In these cases, the machine is additionally equipped with a drilling unit. Boring out to 100 mm diameter, depending upon machine, is possible.

The drill unit can be equipped with either a 5-Fold, a 12-Fold tool changer or with no tool changer for a manual tool change.

The control is delivered with a fully configurable database for each tool and material for the drill unit. All parameters such as diameter, spindle speed, feed rate, tool length, etc. can be edited.

New tools for the drill unit can easily be added by the operator.

The drill unit is equipped with a minimum quantity lubrication unit, which is fully controlled by the control. Individual coolant values can be set for each tool for each material. If hole piercing no longer possible because of material thickness, then deep hole drilling can be used.

The drilling head complements the cutting system for the following requirements:

#### Drilled hole as part of the contour (contour holes):

- + For high accuracy (cylindrical, round, etc.)
- + If a hole cannot be cut

- + If a hole must be drilled because of quality required
- + As preparation for later processes such as thread cutting, countersinking etc.

#### Hole piercing done in advance with drill (Edge start):

- + If an inner contour is smaller than the lead-in line required
- + Increase of process stability
- + Increasing the consumable lifetime of oxyfuel and plasma torches
- + For thick material the deep hole drilling process can be used (>200 mm – 300 mm drill depth)

**Tools (also thermal cutting tools) are to be used to process a hole:**

- + Thread cutting / forming
- + Boring: with this process the core hole is cut slightly undersize thermally (oxyfuel or plasma) and then drilled out with a boring tool.
- + Countersinking: Countersinking an already produced drilled hole or thread

Summary of the advantages:

- + High accuracy
- + Internally cooled tools
- + Automatic tool changer
- + Time saving: cutting and drilling on one machine

Technical Data	
Tool holder	SK40
Max. motor power, Spindle	11kW
Max. Drehmoment Spindel	80 Nm
Spindle speed	0-4000 rpm
Max. stroke (Ht. suspension)	490 mm
Max. feed speed (Ht. suspension)	10 m/min
Max. feed force (Ht. suspension)	6000 N

Capacity	
Drill diameters	5-32 mm
Drilling depth	0,7 x Diameter - 300 mm
Thread diameter	M5 - M20 (or equivalent)
Boring diameter	30 - 100 mm
Countersinking Diameter	up tp 40 mm

The above values are for Mild Steels. For other materials the parameters vary. The absolute limit of capacities is determined by the machine construction, the tool changer used, the mounting position of the equipment, the workpiece materials used and the condition of the tool.



## EQUIPMENT AND TOOLS

### Blasting

This process is mainly used in shipbuilding where primed plate must later be prepared for welding.

In one operation the plate is blasted and marked. The automatic filter unit permits a continuous blasting operation. Stiffening plates can be welded on faster. This means a considerable time saving in the production process.

Thanks to the closed circuit blasting medium flow the process is economic and environmentally friendly.



## EQUIPMENT AND TOOLS

### Belt Grinder

Belt grinder device to remove primer. The material removed is sucked up and trapped in a filter. The grinder is used in conjunction with a marking tool so that the material can be cleaned and marked in one process.

The belt grinder is suitable for steel sheets with Zinc Silicate primer and a coating thickness of approx. 15 to 18 µm.



## CUTTING TABLES AND FILTERS

### Filters

The new filter series offers a large selection of filter solutions for flexible use in industrial extraction. The powerful units guarantee a safe and healthy working environment. Because of their low consumption of current and compressed air and the long interval between services they are very economical.

### Water Tables

For special materials or especially high requirements for low distortion and low heat affected zones, there are cutting processes in, on or over water.

For all variations, e.g.:

- + Automatic level lowering for loading/unloading
- + Agitation devices to prevent the build up of explosive gasses when cutting aluminum under water
- + Fully automatic slag removal
- + Stops which can be lowered



## CUTTING TABLES AND FILTERS

### Cutting tables with fume extraction

Fume extraction cutting tables from Messer satisfy the requirements for optimum production conditions with oxyfuel, plasma or laser cutting. Reliable safety for the machine operator, high energy efficiency and the optimum layout of the production process are the criteria using which Messer can prepare the best cutting table for every application from its extensive modular system.

For simple cleaning of the tables we offer not only slag trays but also various automatic systems integrated into the tables and matched to the cutting process. These are also suitable for removing small parts and include: vibration feeders, scraper conveyer tables and belt conveyer tables.

To suit the individual application or logistic requirements of our customers the tables are built nearly individually by using modern modular constructions.

**FEATURES**

- + Process speeds of 15 m/min and 24 m/min
- + Primer thickness approx. 20 µm
- + Strip width of the blasted plate 20 or 40 mm ± 2mm

\* Values depend upon the type and thickness of the primer

**FEATURES**

- + Processing up to 24 m/min feed speed
- + Material thickness 4 - 40 mm
- + Working directions: Longitudinal, diagonal, and transverse grinding through continuous rotation of the grinding head from 0° to 180°





## MACHINE CONTROLS

### CNC Controls

Our exclusive CNC control integrates the experience from several thousand installations world-wide. A comprehensive library of part programs, a database with multiple processes, CAD import, contour nesting. Productivity monitoring and remote diagnostics are just some of the core characteristics available to you.

The user interface with the consistent operating concept is very clearly structured with easily understood symbols, photos, and graphics. Thanks to the easily learnt functions, new employees can be quickly inducted and thus quickly become expert operators.

Do you want to be competitive and well positioned for the future?

The digitalisation of production and of your processes is a critical factor in this. The deep integration of our software suite OmniFab in our Global Connect

#### FEATURES

- + Modern operating interface on Microsoft.net technology
- + Database with multiple processes make every operator into a professional
- + Modern, graphical interface minimises the learning curve



#### FEATURES

- + Joystick and handwheel increase user friendliness
- + Video camera as set-up tool or for process monitoring
- + Most modern BUS system facilitates modular expansion and simple retrofits



## AUTOMATION

### Material Handling

Thermal cutting technology has developed rapidly in recent times. So have the cutting systems. Ever more processes can be automated. This is an important step to counter the increasing lack of skilled staff.

The prerequisite for this is an intelligent networking of machines and systems with the most modern information and communications technology. Building on our programming station software OmniWin, we are now able, for example, to make all data from cutting plans available to automation before and after the machine. Thus Messer cutting machines are open to all conceivable automation combinations, for maximum machine utilisation and increased productivity in the entire value chain.

With respect to the actual machine park for automatic material supply, this is a very wide field and requires an appropriate analysis of customer requirements for the planning. We offer here a large range of our own solutions and can, if required, combine with existing components from third party suppliers

This can already start in the material stores and goes on through the automatic loading of the raw plates onto the cutting machine or the material supply system for multiple machines.

The cutting machine itself takes over the processing of the cutting order independently after the release from the supply system and sends a finished message or release for the automatic removal of the cut plan.

Depending on the structure of the cutting factory, further components are then available for the

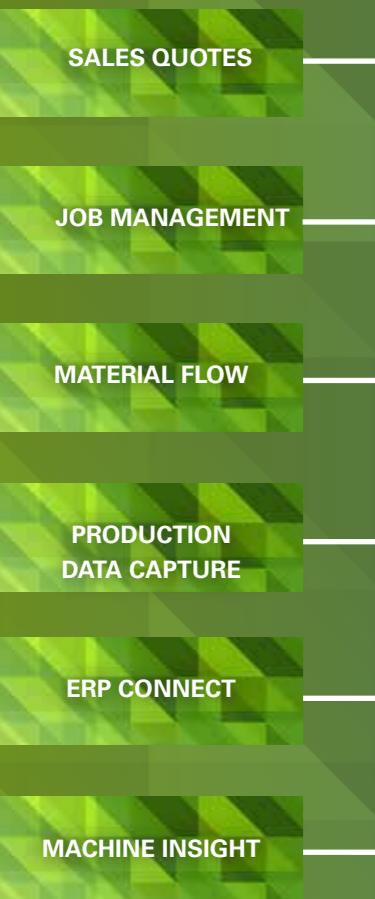
- + Unloading of the complete nest for onwards transport or
  - + Separation and stacking of the cut parts (by target or by order) as well as
  - + If necessary, the transfer to the deburring
- Also the remnant grid can be automatically removed in one piece or in parts.

Maximise your machine utilisation and improve your productivity with our modular automation solutions.

## DIGITAL WORKFLOW

# DIGITIZE YOUR PRODUCTION

The digital solutions perfectly complement the holistic range of products, automation, services and know-how.



## OMNIFAB Software Suite for digital transformation

The OmniFab software suite integrates Messer Cutting Systems' mechanical engineering technology into business processes in a holistic and process oriented manner.

It provides relevant information for work preparation, production planning and plant management by connecting all systems. OmniFab also integrates material handling systems like loading/unloading stations, towers, material transportation devices and more – even on mobile devices.



## OMNIWIN Ideal for work preparation

The powerful, easy-to-use design and nesting software that saves time, materials and costs. OmniWin is the ideal tool for work preparation when cutting with oxy-fuel, plasma and laser cutting. It takes on all the cutting tasks that arise, tailored to the order-related production with CNC-controlled cutting machines.

# YOUR AUTOMATION SOLUTION AT A GLANCE

Machine and software from a single source:  
Discover our digital information and process technologies combined with intelligent automation solutions.

## COMPLETE INTEGRATION

### Modular Portfolio

Our modular software portfolio integrates your cutting machines in the best possible way into your business and production processes supporting key functions throughout the entire workflow.



#### 360° SERVICE

## The Original - all round more

Combine your original Messer machine with the original Messer service support and ensure the maximum availability of your system and thus an important part of your business success. With the **360° Messer service concept** we offer you Service Level Agreements, which you can match individually and flexibly to your requirements: For a fixed price, for a fixed duration.

#### Diagnosis/Inspection/Maintenance/Repair Center

In case of a breakdown we can be with you on the spot if required. You may be sure that our specialists are always up to date on the latest state of technology and know your unit well. With remote access our support technicians can already make a reliable remote diagnosis in advance and plan what needs to be done.

#### Consumable and Spare Parts: Original and quickly obtained

All common articles are stocked in our central European warehouse. Our service includes fast order processing and shipment from our central stores, near Frankfurt, usually within one working day. The original parts guarantee high production quality and availability.

#### CAD/CAM Software-Support: Current and fitting

We offer the complete range of the most modern CAD/CAM support: from telephone Hotline and Remote Support through Update and extension programmes right up to Workshops and Expert dialogs.

#### REMOTE SERVICE 2.0

- + Only one connection away
- + Multimedia communications via M2M technology
- + Priority service if service call needed
- + Guaranteed reaction time
- + Technical quarterly report 2.0 (TQR) on your machine park



#### SERVICE LEVEL AGREEMENTS

- + With the Messer Service concept you can compose your requirements in individual Service Level Agreements
- + Over a long period: All service modules individually, various combined or complete in the 360° All-In Service Package



#### RETROFIT

## Increased lifetime and productivity

A retrofit (or conversion) means upgrading to the latest technology such as the most modern numerical controls on a PC basis or torch lifters with automatic height control through the new processor oriented sensing methods. Typical components for retrofits are the new generation of plasma systems for the plasma process or high performance oxyfuel torches.

Your advantages:

- + Greatly improved performance for low investment
- + Short down-times
- + Better availability of consumables and spare parts



#### KNOW-HOW

## Academy

In times of increasing competitive pressure it is exactly the right time to invest in the competence and know-how of your employees. After all it is not only the machines which should work productively but also the people who operate, program and maintain them.

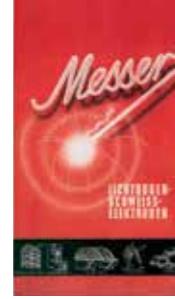
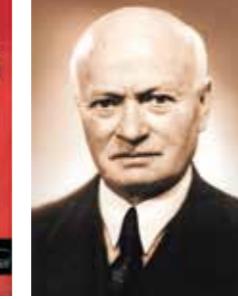
At Messer Cutting Systems in Groß-Umstadt knowledge is imparted effectively and practically. Our experienced trainers show you how you can get the optimum out of your equipment, plant and software using various media and directly on the machine.

Messer Cutting Systems supports you not only in the training of craft employees but also in the preparation and execution of certification processes.

#### CNC TRAINING FOR YOUR MACHINE PERSONNEL

- + Courses for operators
- + Courses for programmers
- + Courses for service technicians (on request)
- + Workshops (on request)
- + Individual courses according to customer requirements (on request)



Foundation of Frankfurter Acetylen-Gas-Gesellschaft, Höchst am Main	Market launch of product range for oxyfuel welding and cutting using the brand name "Original Messer"	Production of arc welding electrodes	Expansion in Europe and the US driven by Adolf Messer	Merger with Knapsack-Griesheim AG (Hoechst) to form Messer Griesheim GmbH	MG Systems & Welding produces cutting machines for the North American Market	Stefan Messer becomes member of Executive Board	The Messer family, led by Stefan Messer, acquires all company shares	Foundation of MesserSoft and manufacturing site Messer Cutting Systems, India	Founding of Messer Cutting Systems Academy	Messer Group acquires significant parts of Linde's business with CVC Capital Partners	Launch of the globally unified modular machine platform with the first series ELEMENT 400	Flame Tech acquisition through an affiliate company		
														
1898	1908	1932	1946	1965	1978	1998	2004/2005	2008	2012	2019	2020	2022		
1903	1911	1945	1953	1970	1995	2000	2007	2011	2017	2020	2020	2023		
														
Ernst Wiss develops the first oxyfuel cutting torch	Messer & Co. GmbH: move into US market	Rebuilding Adolf Messer GmbH	Dr. Hans Messer assumes control	First CNC and laser cutting system on the market	Foundation of Messer Cutting & Welding, China	Foundation of MEC Holding GmbH by merger of Messer Cutting & Welding GmbH with the Eutectic Castolin Groupe	Messer Cutting Systems starts off manufacturing in Brazil	The entire corporate Head Office moves to Bad Soden	Spin-off of the area of oxyfuel technology into an independent business unit (OBU)	Establishment of own Messer Cutting Systems companies in Europe	Marcel Messer becomes part of the management of MEC Holding GmbH	Messer takes over Messer Industries completely and gains GIC as new long-term partner; the group celebrates its 125th anniversary		

## MANY COMPETENCES. ONE WORLD. THE MESSER WORLD

Since 1898, the Messer brand stands for continuous presence in the markets for industrial gasses and welding equipment. The associated companies present themselves to customers and partners with the know brand as part of the company alliance "Messer World".

They offer application specific know-how and products which optimise production processes and extend or significantly improve the lifetimes of production resources.

**ASCO** Carbon Dioxide is a supplier of individual and complete CO<sub>2</sub> solutions.

**BIT** is a development, production, and service partner for diagnostic medical equipment.

**Messer** is the world-wide largest specialist for industrial, medical, and special gasses in private ownership.

**Messer Cutting Systems** offers the entire range of thermal cutting and specialises in oxyfuel technology.

**MesserSoft** is the software partner for customers of Messer Cutting Systems.

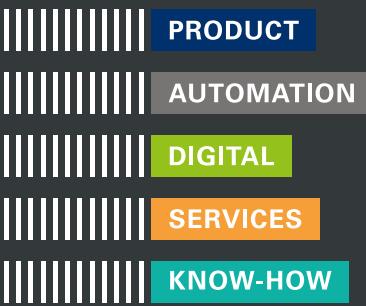
**Messer Medical Home Care** concentrates on services in the field of home care.

**Spectron Gas Control Systems** offers gas supply systems for multiple applications.



# CREATING SOLUTIONS BEYOND MACHINES

## WHAT WE STAND FOR



Messer Cutting Systems is a global supplier of cutting edge technology for the metalworking industry.

With over 900 employees worldwide in over 50 countries, we maintain a constant dialogue with our customers to achieve sustainable user-oriented innovation.

Our portfolio embraces the themes PRODUCT, DIGITAL, SERVICES, AUTOMATION and KNOW-HOW. We will live up to our claim "Creating Solutions Beyond Machines" not just with the most modern cutting systems and solutions for oxyfuel technology.

Appropriate services and training, our own software applications as well as the integration of solutions from our technology partners, e. g. in the field of automation, complete the machine to give forward-looking total solutions.

Our know-how combined with our customer-oriented attitude and actions have made us the worldwide partner of choice for innovative total solutions on all aspects of cutting systems for over 125 years.

## Messer Cutting Systems GmbH

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THE MESSER  
**EXPERIENCE**