

*Clean and efficient plasma, laser
and oxy-fuel cutting solutions*



YOUR PARTNER FOR CLEAN AND EFFICIENT SOLUTIONS

About KEMPER GmbH

KEMPER is an internationally active company based in Germany. We're a family-owned company and have been investing in developing technology since 1977. Our fields of business include occupational safety, extraction and filter technology, as well as warehousing and automation engineering.

Customer satisfaction is very important to us. We always strive to meet your needs. We have several hundred employees worldwide handling projects for our clients and consistently keeping abreast with the very latest engineering developments.

We have production locations in Lünen, Shanghai and Prague as well as at our main base.

KEMPER has eight offices and numerous dealers all over the world. Our head office in Germany, however remains the heart and soul of the company.

We intend to continue developing and manufacturing our products there.



Gerd Kemper

Björn Kemper

Gerd Kemper has managed the company since it was founded and is nowadays responsible for the Development, Production and Purchasing divisions. He always aims to develop and manufacture top quality products.

Björn Kemper joined the company 12 years ago and now runs the Marketing and Sales divisions. He is primarily interested in innovative sales concepts transparently reflecting good ideas and mature technology.

TABLE OF CONTENTS

<i>Overview:</i>	<i>page</i>
Extraction tables for cutting systems	4
<i>KemTAB Basic</i>	5
<i>KemTAB Advance</i>	6
<i>KemTAB HiEnd</i>	7
<i>KemTAB Vibro</i>	8
<i>KemTAB Aqua</i>	9
Overview & selection criteria	10 - 11
Material supporting equipment	12 - 13
Preliminary separator – <i>SparkTRAP</i>	14
Fans – <i>FanBOX</i>	15
About extraction and filter systems	16
<i>PlasmaFIL</i> <i>OxyFIL</i>	17
<i>PlasmaFIL Basic</i> <i>OxyFIL Basic</i>	18
Dust disposal – <i>DustEVAC</i>	19

CONTACT

KEMPER GmbH

Von-Siemens-Straße 20
48691 Vreden
Tel.: +49 (0) 2564 / 68-0
Fax: +49 (0) 2564 / 68-120
mail@kemper.eu



www.kemper.eu



EXTRACTION TABLES

FOR CUTTING SYSTEMS

Important things to know

Cutting systems, of whatever kind, must primarily do one thing – cut in a qualitative and effective optimal manner.

This predicates not only optimal plasma, laser or oxy-fuel systems but a cutting table perfectly tailored to the needs.

That's not all. The smoke that is generated in thermal cutting of metal must be extracted away to prevent any risk arising to the health of anyone in the vicinity. Dust, sparks and smoke represent a risk to machinery as well in the long term and may hamper its functioning. An Extraction system is thus absolutely essential.

KEMPER Extraction tables

Extraction segments

To keep extraction needs as low as possible our tables are split into individual segments which can be separately extracted from.

Fire safety

To prevent fire due to sparks being sucked up, the tables are so designed that they pre-clean the extracted air.

Cleaning

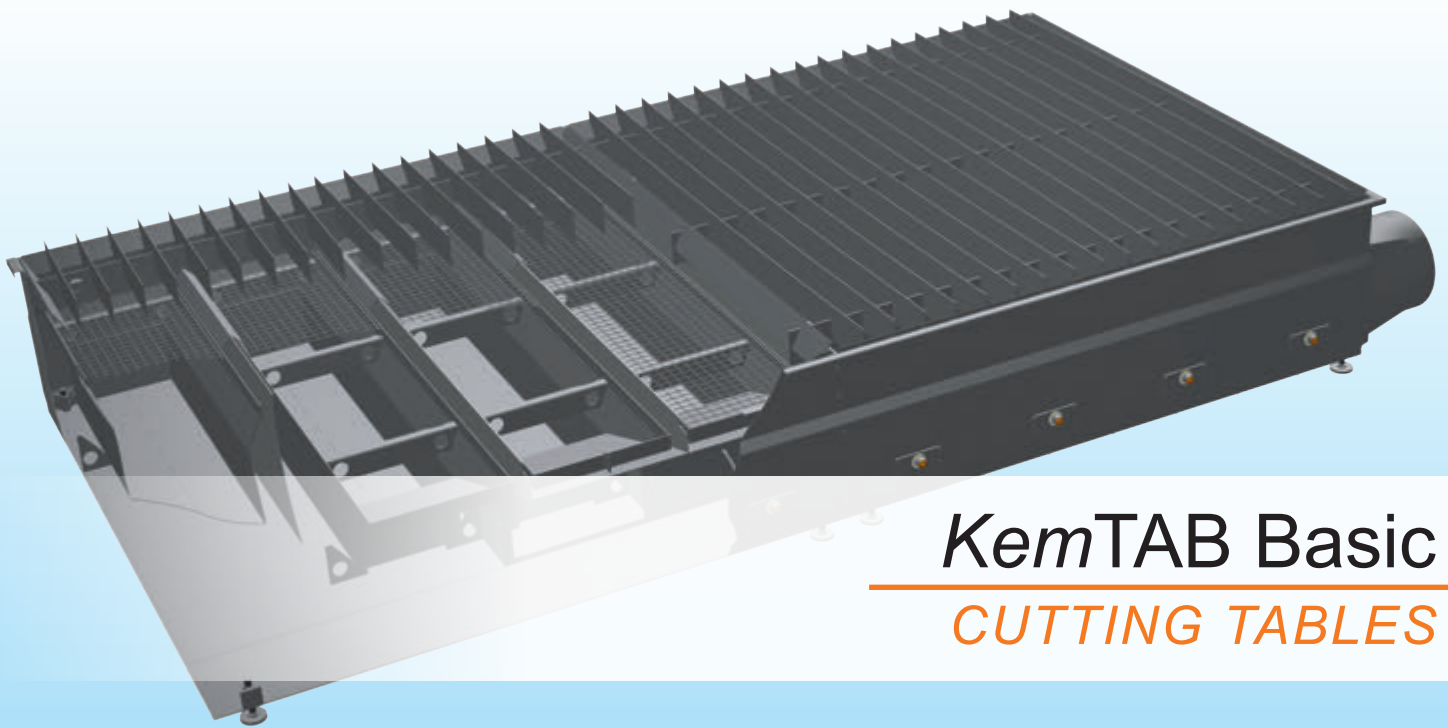
Table maintenance is important to ensuring smooth functioning of the system. Crane hooks are installed on every element of our extraction tables. This makes it easy to remove the material supports, gratings and dust/slag containers. Containers are designed to make emptying easy.

Modular design

KEMPER extraction tables consist of individual standard modules that can be connected together. This makes it possible to implement any size of table desired. This standardisation makes combining modules quick and easy.

Surface extraction

The design of the extraction tables ensures that the dust generated is extracted evenly over the entire table surface area. This yields efficient and safe extraction of dust generated without sparks getting into the filter.



KemTAB Basic

CUTTING TABLES

KemTAB Basic

KemTAB Basic cutting tables are the economical solution for cutting metal of up to 75 mm thickness. The standard package includes mechanical control of the extraction valves, material support frames and slag trays.

Individual system modules are split into segments. The valves of each segment are administered by sliding controls.

The extraction flap control makes it feasible for only the segment over which cutting is being done to be opened. The material support frames of the basic table consist of flat steel rods inserted at a slant.



KemTAB Basic



Slag tray

PRINCIPLE OF OPERATION

The downward pressure exerted in cutting metal generates ascending dust and sparks. Large particles and major sparks land in the slag tray.

On KEMPER extraction tables the ascending fine dust is extracted by the integrated surface extraction system and deposited in the filter system connected to the table.

Each module has its own internal integrated extraction channel. The internal extraction flaps are opened mechanically.

BENEFITS

- **Longer cleaning intervals thanks to the large slag trays**
- **Simple table cleaning**
- **Improved cutting quality thanks to the design**
- **Efficient and safe extraction of dust by the surface extraction system**

Technical data

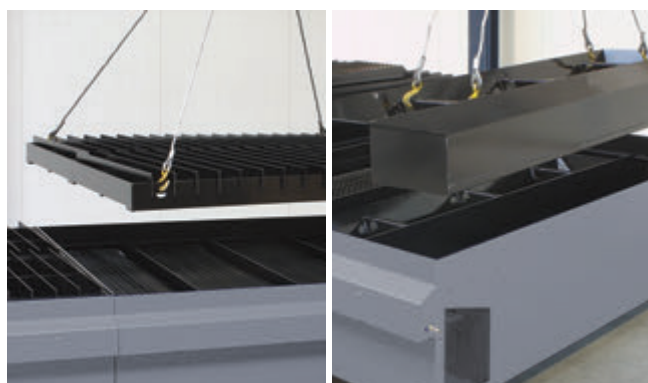
Load capacity:	75 mm sheet steel
Module widths:	1.100 mm, 1.600 mm, 2.100 mm, 2.600 mm, 3.100 mm
Table height:	700 mm
Segment intervals:	515 mm
Piping connection:	at the front

KemTAB Advance

CUTTING TABLES



KemTAB Advance in the production line



Unloading of material support and slag tray

KemTAB Advance

KemTAB Advance tables offer rugged and flexible solutions for cutting systems. They are optimal for use in cutting metal of up to 150 mm thickness.

The features include pneumatic control of the extraction valves; material support framework and slag trays. Individual system modules are split into segments. The flaps in each segment are actuated by control slides.

PRINCIPLE OF OPERATION

The principle of operation corresponds to that of KemTab Basic.

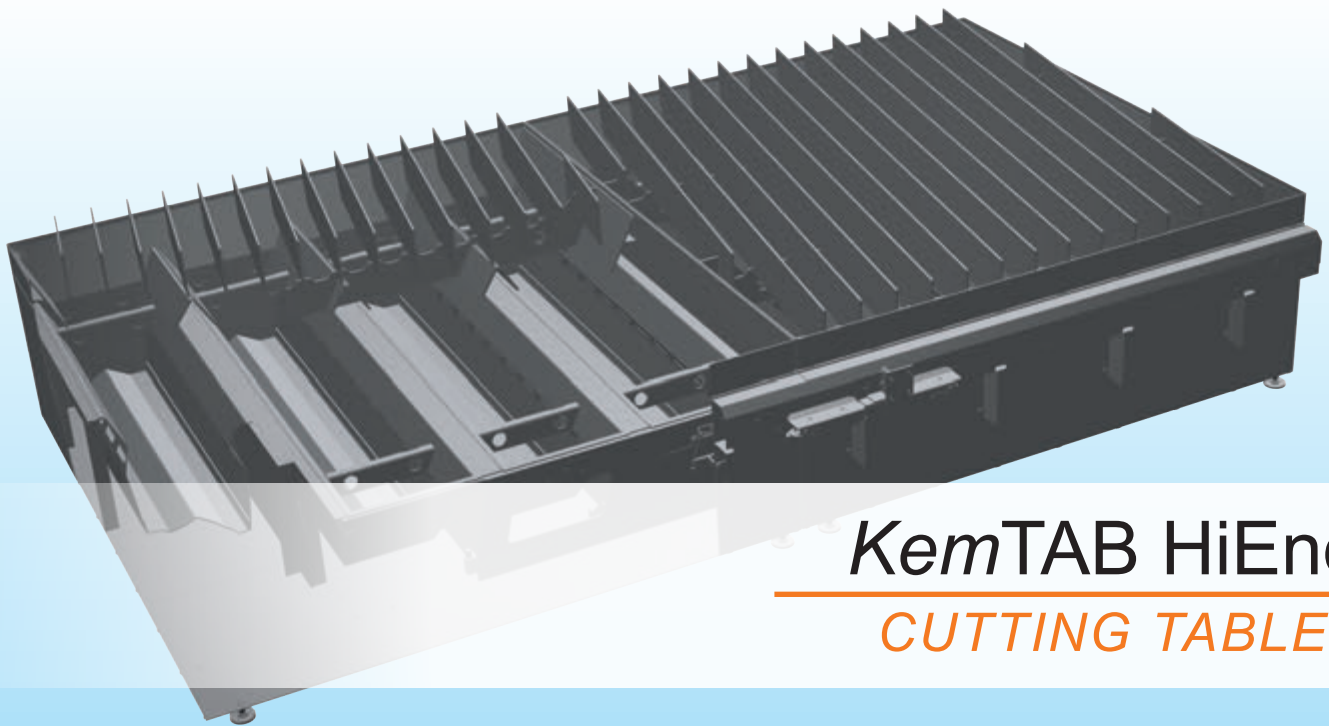
The internal extraction valves in the KemTAB Advance, however, are pneumatically activated.

BENEFITS

- **Longer cleaning intervals thanks to the large slag trays**
- **Easy table cleaning**
- **Improved cutting quality thanks to the support frame design**
- **Efficient and safe dust extraction by the surface extraction system**
- **Can be used for sheet metal of up to 150 mm thickness**
- **Pneumatic activation of the extraction valves**

Technical data

Load capacity:	200 mm sheet steel
Module widths:	1.100 mm, 1.600 mm, 2.100 mm, 2.600 mm, 3.100 mm
Table height:	700 mm
Segment intervals:	515 mm
Piping connection:	at the front or under the table



KemTAB HiEnd

CUTTING TABLES

KemTAB HiEnd

KemTAB HiEnd extraction tables are used under extremely demanding conditions. It can even cope with tasks with a cutting performance in excess of 600 amperes and a sheet thickness of over 250 mm.

Features

The KemTAB HiEnd offers rugged design and consistent separation of the material support frame from the load-bearing parts of the table. This makes for less strain on the latter and the cutting table can hence be used with high cutting power and at high temperatures. Temperature resistance is further increased as valve activation and the associated pneumatic system are attached externally. The reinforced specially shaped slag trays with downward facing extraction apertures make it possible to handle high slag volumes and heavy sparking.

Cleaning

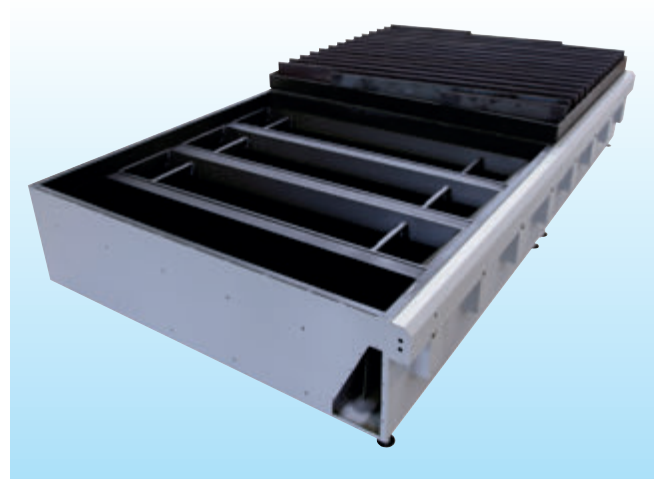
Like all other KemTAB extraction tables the KemTAB HiEnd is easy to clean. The slag and swarf generated by cutting fall through the supporting frame and collect in the big slag tray. They can then easily be disposed of once the support frame has been removed. This ensures efficient low-maintenance table operation.

Material-supporting frames

KEMPER offers a variety of extremely rugged support frames for the KemTAB HiEnd depending on use and cutting method.

Extraction

Transverse extraction apertures integrated in the slag trays with equal pressure distribution make optimal extraction feasible. In this way complete capture of the cutting dust is ensured. The valve channels are laterally integrated in the table and only minimally influenced by the cutting beam. All pneumatic components are isolated from the airflow, which results in less wear.



Material support and slag tray of the KemTAB HiEnd

BENEFITS

- **Ideal for very high cutting performance**
- **High temperature resistance**
- **Rugged separate cutter support**
- **Separation of airflow and mechanical parts**
- **Low-resistance extraction channel**
- **Easy to assemble**
- **Little down time**

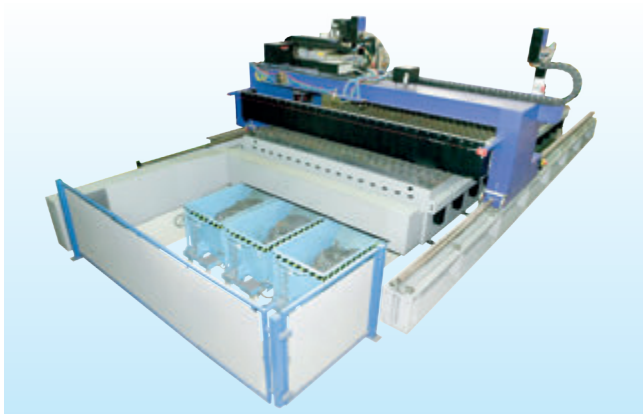
Technical data

Load capacity:	300 mm sheet steel
Module widths:	1.700 mm, 2.200 mm, 2.700 mm, 3.200 mm
Table height:	850 mm
Segment intervals:	515 mm
Piping connection:	at the front



KemTAB Vibro

CUTTING TABLES WITH VIBRATING CONVEYORS



Discharge of slag and small parts in containers

BENEFITS

- **Permanent discharge system**
- **Best possible degree of utilisation**
- **Efficient dust handling**
- **Separation of airflow and mechanical parts**
- **Extraction channel with optimised resistance**
- **Minimal down times**
- **Minimal maintenance costs**

Technical data

Load capacity:	200 mm sheet steel
Module widths:	1.600 mm, 2.100 mm, 2.600 mm, 3.100 mm
Table height:	850 mm
Segment intervals:	515 mm
Piping connection:	at the front

KemTAB Vibro

Efficient cutting systems need efficient cutting table systems. This way, down times, due to cleaning and maintenance can be cut to a minimum. This is especially important if the cutting process is automated.

Features

KEMPER's KemTAB Vibro is a cutting table for use under demanding conditions and in addition to this is equipped with an automated discharge system. This makes uninterrupted operation without cleaning breaks feasible. The KemTAB Vibro functions using the oscillating conveyor principle. The slag and swarf generated by cutting are constantly moved into a container to the end of the table. The result is a much higher degree of utilisation of the cutting plant and hence much higher efficiency. Cleaning intervals are thus cut to an absolute minimum.

Oscillating conveyor system

The oscillating channels operate in the resonance range and thus save a lot of energy and are low in wear. One or more such channels are installed longitudinally on the table, the number depending on its length. The drives are installed externally on the table front in a rugged housing. Each channel has its own drive.

Material supporting frames

KEMPER offers a wide range of material support frames for the KemTAB Vibro. There are a variety of models to choose from depending on cutting process and requirements.

Extraction

Air diffusers installed in the table segment-wise and running laterally with equal pressure distribution ensure optimal extraction. This guarantees that all cutting dust is dealt with. The valve channels are laterally integrated in the extraction tables. The pneumatic parts are separated from the air flow, which reduces wear.



KemTAB Aqua

WATER CUTTING TABLE

KemTAB Aqua

KEMPER water cutting tables in the *KemTAB Aqua* series are suitable for plasma and oxy-fuel cutting systems of metal panels above and below water. This has many benefits. In addition to reducing the noise level to a great extent as well as absorbing most of the cutting dust when cutting under water the material being worked on suffers very little distortion. Last but not least, this ensures high cutting quality. A water cutting table with variable water levels is essential for cutting both above and below water.

Integrated air chambers

KemTAB Aqua water cutting tables with level control have air chambers used to adjust the water level. Pumping in or extracting air to/from the integrated air chambers adjusts the water level. At low water levels, cutting can be done above water. *KEMPER* naturally offers the right means of capturing the dust on the material surface that results. The slag generated by cutting is captured in slag trays located below the material support frame. When the water level is lowered and the support frame removed, these trays can easily be removed and cleaned.

Table control systems

The tables have their own control systems. These can either be operated manually or linked with the cutting plant control system. Automatic and easy operation is thus ensured.



Side view of a KemTAB water cutting table



KemTAB water cutting tables in production line

BENEFITS

- *Very little distortion of the cut material*
- *High cutting quality*
- *Hardly any burring on the lower cut edges*
- *Absorption of the cutting dust in the water*
- *Very little noise pollution*
- *Project-specific sizing*

EXTRACTION TABLES

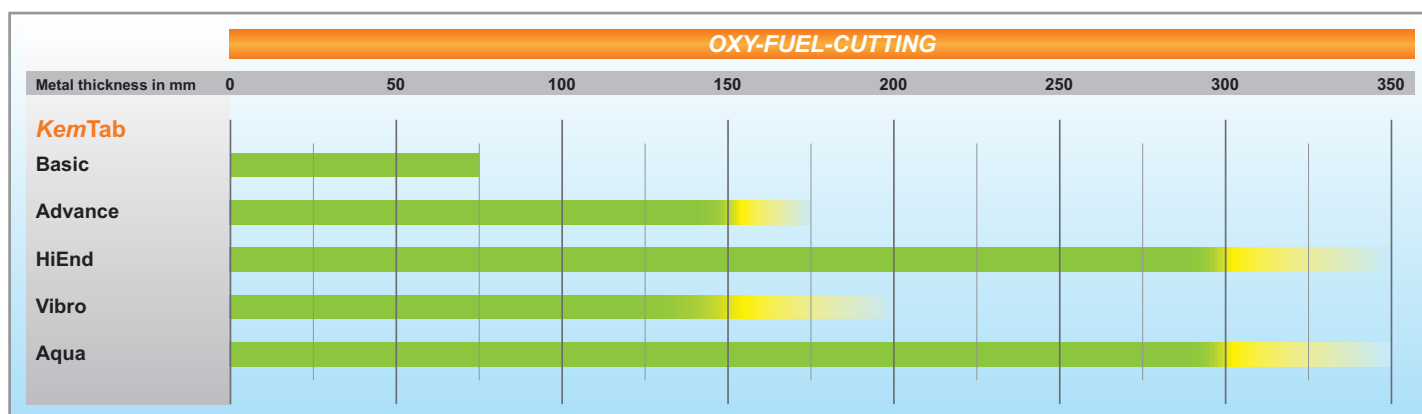
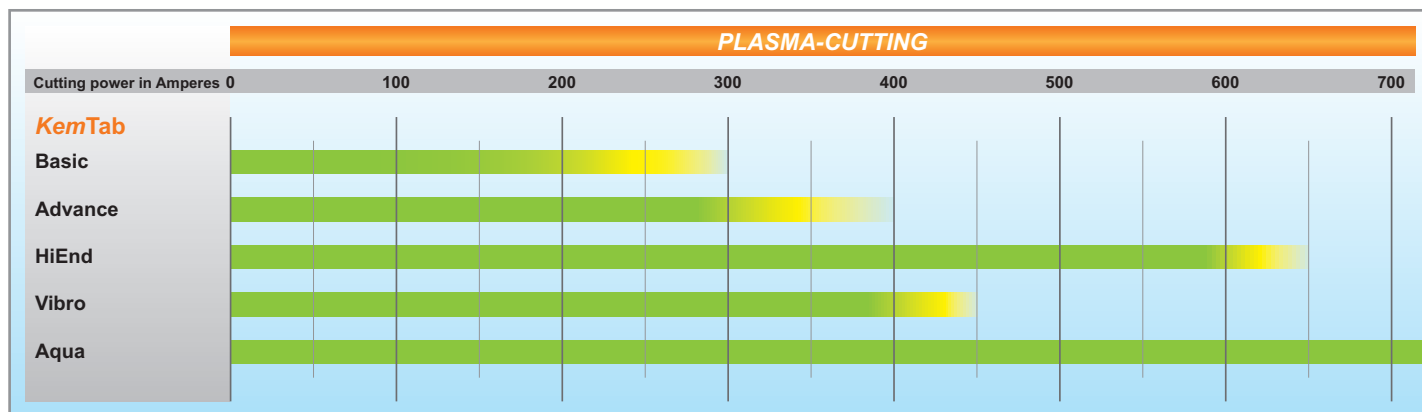
OVERVIEW

KemTAB table models:

Technical Data	Basic	Advance	HiEnd	Vibro	Aqua
Sheet metal thickness capacity in mm	75	200	300	200	300
Maximum width in mm	5.200	optional	4.400	4.200	optional
Maximum length in mm	20.600	optional	optional	12.360	optional
Table height in mm	700	700	850	850	850
Weight / m ²	approx. 180 kg	approx. 250 kg	approx. 400 kg	approx. 300 kg	approx. 700 kg (incl. water)
Segmentation in mm	515	515	515	515	-
Slag trays	▪	▪	▪	-	▪
Material supporting frames					
easyFRAME Basic	▪	-	-	-	-
easyFRAME Advance	-	▪	-	▪	-
Control systems					
Mechanical	▪	▪	-	-	-
Mechanical-pneumatic	▪	▪	▪	▪	-
Inductive-pneumatic	-	▪	▪	▪	-
Electronic-pneumatic	-	▪	▪	▪	-
Discharge / cleaning					
Manual	▪	▪	▪	-	▪
Oscillating conveyor	-	-	-	▪	-
Chain conveyor	-	-	-	-	▪
Piping connection					
At the front	▪	▪	▪	▪	-
Under the table	-	▪	-	-	-



This overview makes clear which table is optimally suitable for which process.



MATERIAL SUPPORTING FRAMES

easyFRAME

easyFRAME

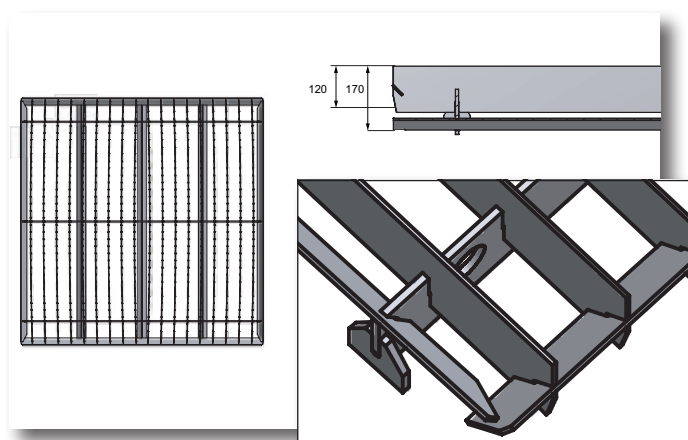
Features

The **KEMPER easyFRAME** cutting plant support frames consist of interlocking rods, supporting rods and deflector plates. The result is a self supporting construction without any outer frame which can therefore do without welded parts.

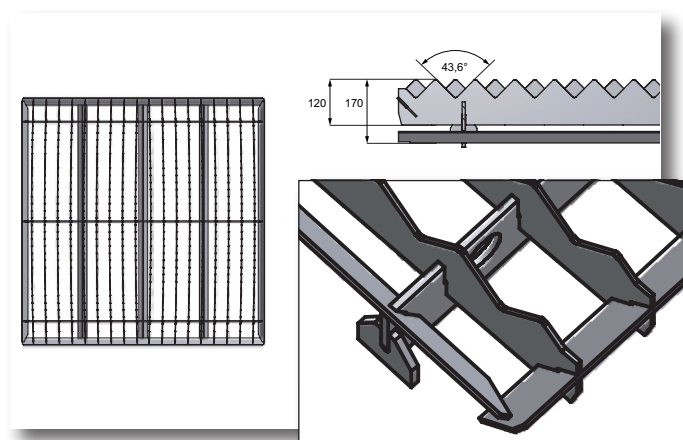
It is quickly and easily assembled. This design yields a smaller contact surface for the cutting beam. This leads to less reflection and therefore less wear and better cutting quality.

BENEFITS

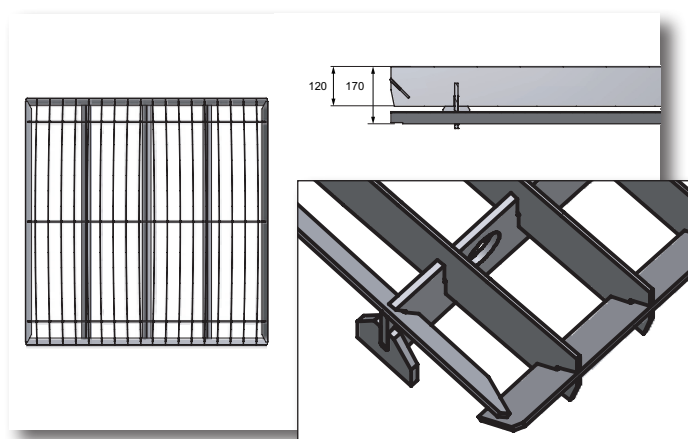
- *Self-supporting support frame with no welded parts*
- *The material support frames can be completely disposed of*
- *Slag doesn't accumulate in corners and pockets*
- *Less reflection of the cutting beam*
- *Support frames can be made by the client to specifications provided*
- *Simple installation of a new frame without any need for welding*
- *Disposal of old frames and installation of new is quick, easy and time saving*
- *Optimal solution for use when loading with a magnetic crane*



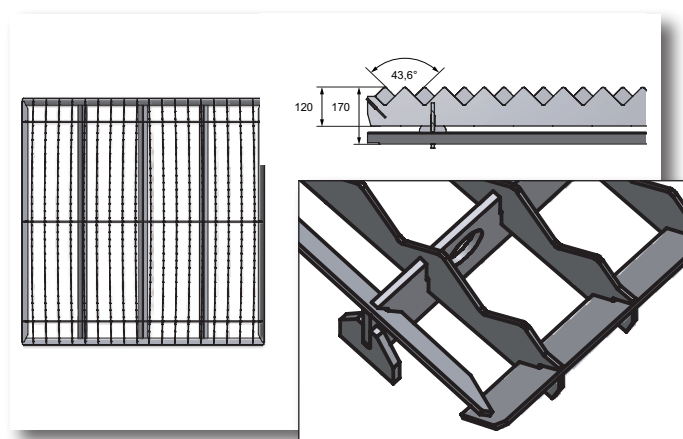
easyFrame for KemTAB Basic
Straight support rods, 120 x 3 mm, version 603



easyFrame for KemTAB Basic
Jagged edged support rods, 120 x 3 mm, version 607



easyFrame for KemTAB Advance and Vibro
Straight support rods, 120 x 5 mm, version 119



easyFrame for KemTAB Advance and Vibro
Jagged edged support rods, 120 x 5 mm, version 116

MATERIAL SUPPORTING FRAMES

OVERVIEW

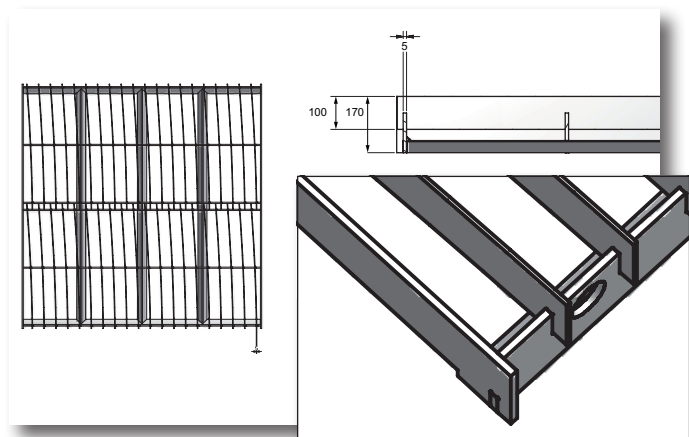
Additional material support frames

To cater for all needs *KEMPER* offers a variety of material support frames for all extraction tables.

The material support frames are tailored to the table module

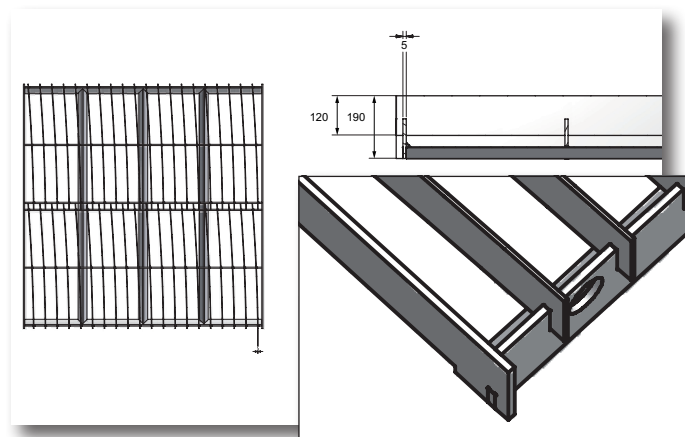
concerned and available in differing versions.

The choice depends on the cutting process employed and the material to be cut.



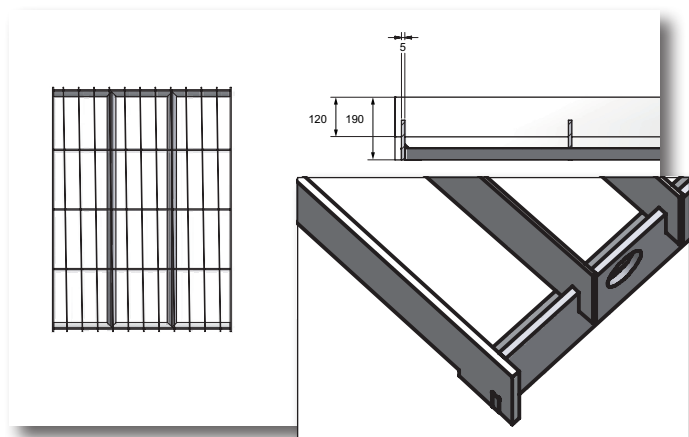
Version 000

Support frame of sheet metal, 120 x 10 mm, with support rods 100 x 5 mm, inserted aslant at 100 mm intervals



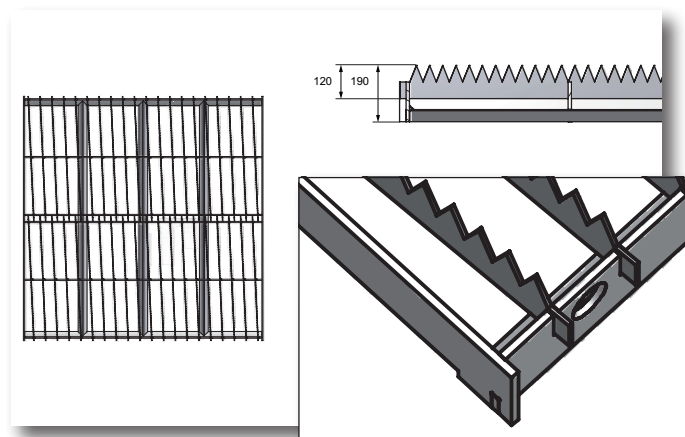
Version 004

Support frame of sheet metal, 120 x 10 mm, with support rods 120 x 5 mm, Inserted aslant at 100 mm intervals



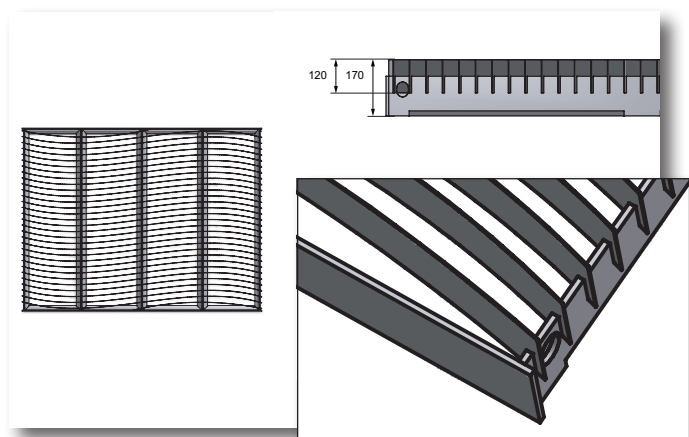
Version 028

Support frame of sheet metal, 120 x 5 mm, with support rods, inserted slightly aslant at intervals of 130 mm for use with forklifts



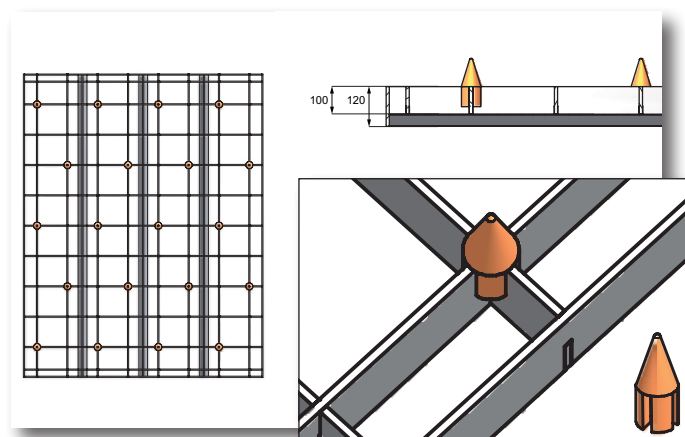
Version 054

Support frame of sheet metal, 120 x 10 mm, with support rods 100 x 5 mm, jagged edged, inserted aslant at intervals of 100 mm for precision sheet metal support



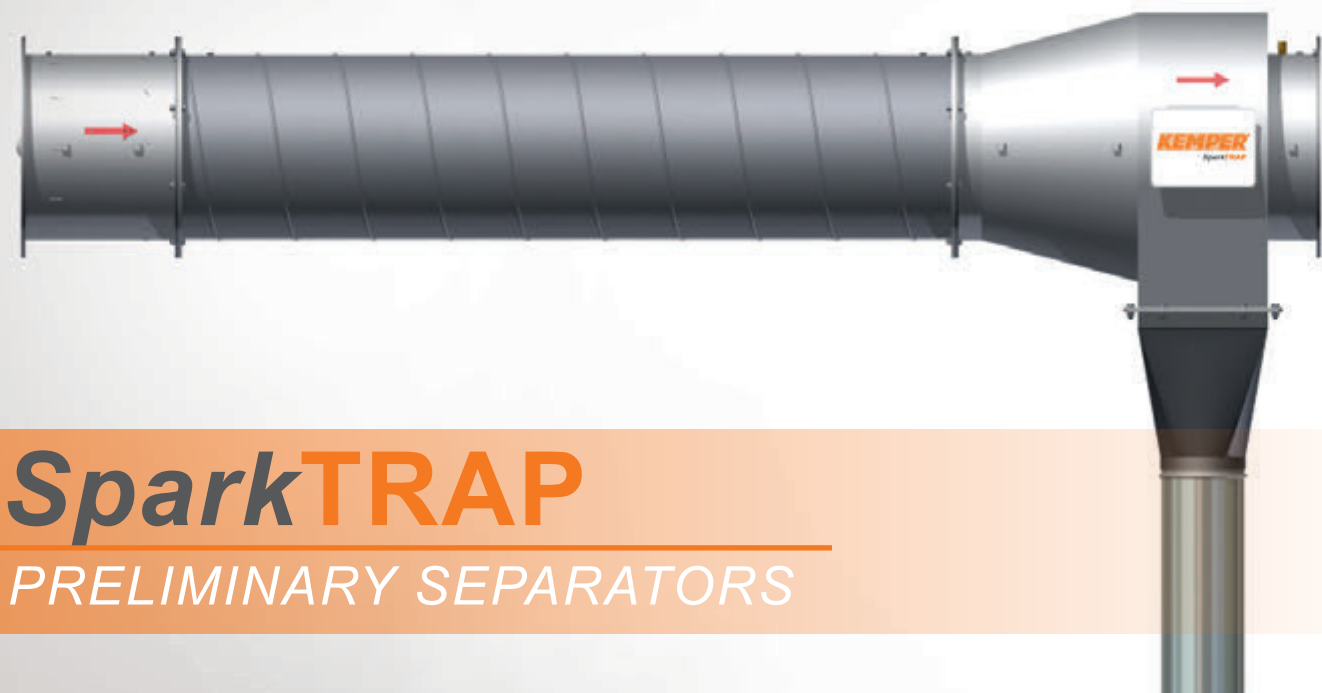
Version 101

Support frame of sheet metal, 120 x 10 mm, with support rods 100 x 1.5 mm inserted longitudinally at intervals of 50 mm, for handling thin coiled sheet metal



Version 131

Support frame entirely of sheet metal, 120 x 10 mm for cutter tips



SparkTRAP

PRELIMINARY SEPARATORS



KEMPER SparkTRAP

PRINCIPLE OF OPERATION

The upstream swirl nozzle rotates the air. In the acceleration path that follows, the rotation speed increases to up to 150 kph. The *SparkTRAP* swirl separator thus separates out large particles, sparks and glowing foreign bodies virtually entirely.

The sparks and particles thus separated out are trapped in a dust collection tank separated from the filter system. This can be removed for disposal of the content even whilst the plant/unit is running.

BENEFITS

- **Virtually complete separation of sparks and large particles**
- **Reduction of the fire risk to an absolute minimum**
- **Increased filter service life**
- **Reduction of operating costs**
- **Simple installation, including as modification**
- **Easy removal of the collection tank during operation**
- **Spark detection can be added to further reduce fire risk**

KEMPER SparkTRAP Preliminary separator

Large dust quantities, such as those that arise in many cutting procedures, strain filter systems and cut filter service life. Sparks and glowing particles also constitute a filter fire risk. *KEMPER's* innovative *SparkTRAP* preliminary separator is the answer. This rotary separator enormously reduces the dust generated and cuts the filter fire risk.

Filter stress

By separating out most of the dust, *SparkTRAP* cuts extraction system filter use considerably. This considerably increases filter system service life and dramatically reduces maintenance and compressed air costs.

The *SparkTRAP* offers virtually complete protection against filter fires by reliably separating out sparks, glowing particles and even burning foreign bodies (e.g. cigarettes).

Preliminary separation

In metal processing, filter systems often have to deal with large amounts of dust, glowing particles and flying sparks.

The *SparkTRAP* preliminary separator developed by *KEMPER* is a great help here. It constitutes a fire prevention system and greatly increases the filter system service life.

Spark detection

A spark detection system can be added to *SparkTRAP*.

The extraction and filter system can then be automatically shut down if defined limits are exceeded. This improves safety and cuts the filter system fire risk enormously.



FanBOX

FAN UNIT

KEMPER FanBOX

KEMPER fan units consist of efficient, noise suppressed industrial standard fans in a rugged steel housing with a soft start facility. They are available in versions of various capacities and can be connected up to our extraction tables. They are to be found together with *SparkTRAP* preliminary separators wherever permissible and where an economical means of extracting harmful substances is needed.



KEMPER FanBOX

FEATURES

- *Efficient fan*
- *Soft start facility*
- *Noise insulated*
- *Rugged steel housing*
- *Stackable*
- *Crane rings*

OPTIONS

- *Automatic start-stop*
- *Frequency converter*
- *Control system with monitoring function*
- *SparkTRAP preliminary separator*



KEMPER®

EXTRACTION AND FILTER UNITS



KEMPER System 8000 extraction and filter system



Extraction and filter system with welding stations

About KEMPER Extraction and filter units

Thermal cutting of metal generates lots of very fine dust harmful to machinery, surroundings and users. It is hence essential that optimal extraction and therefore clean air in the workplace is ensured in all cutting processes.

The amount of dust generated depends on the specific procedure employed and the material being cut. The risk to health involved in oxy-fuel, plasma and laser cutting is especially high as it is dependent on the size of the particles involved and extremely fine particles are generated when these procedures are used

KEMPER can supply tailored filter systems for these procedures. They are tailored to handle the dust generated by these procedures and can be optimally adapted to the specific cutting unit by the incremental power-adjustment of each type.

KEMPER only uses top quality filters in their extraction and filtering systems. Cutting in particular generates very fine particles with a diameter between 0.1 µm and 1.0 µm that are hence alveolar. It is these particles in particular that get into the alveoli (human lungs), diffuse from there into the blood and then settle in the body.

The extraction begins in the cutting table of either a pre-existent cutting unit or a suitable system supplied by KEMPER. The dusty air is sent to the filtration system via piping. After preliminary separation of larger particles the remaining dust particles are separated out at the filter cartridges applying the surface filtration principle.



PlasmaFIL | OxyFIL

EXTRACTION AND FILTER UNITS

PlasmaFIL | OxyFIL

This series of filter systems is specially developed for use with plasma and oxy-fuel cutting systems. The core – the filter element – consists of a specially coated filter medium. To this, the additional system components, that is, fan unit and *SparkTRAP* are added. The *DustEVAC* dust extraction system can also be added.

Filter element service life

Service life can be disregarded when employing *PlasmaFIL* or *OxyFIL*. It is endless if annual servicing is carried out. This makes filter replacement superfluous. The resulting costs are low and calculable.

Future proof

Our systems are so designed that the changes in law concerning fine dust limits to be expected in the years to come are satisfied today. Operators can thus rely on our equipment being future proof.

Dust discharge

Instead of changing dust collection containers, the system can be run using permanent dust discharge equipment. This permits virtually contamination-free dust disposal.



PlasmaFIL



PlasmaFIL connections

OPTIONS

- *Endless filter service life*
- *Permanent dust discharge*
- *Spark detection system*
- *Automated start-stop*
- *Vacuum control via frequency converter*

BENEFITS

- *Filtering using the downflow principle*
- *Modular design*
- *Low power consumption*
- *Minimal compressed air consumption*
- *Touch screen controls*
- *Contamination-free dust disposal*
- *SparkTRAP preliminary separator*



PlasmaFIL Basic | OxyFIL Basic

EXTRACTION AND FILTER UNITS



PlasmaFIL Basic | OxyFIL Basic

PlasmaFIL Basic OxyFIL Basic

The filter systems in the Basic series are specially designed for use with plasma and oxy-fuel cutting. These comply with current regulations and are an economic alternative for the efficient extraction and filtration of cutting dust. At the same time, these filter systems are characterized by their compact design and low requirements.

Filter elements

High quality filter cartridges are used in *PlasmaFIL Basic* and *OxyFIL Basic* filter systems. They efficiently filter the dust generated by surface filtration and have long service lives. The de-dusting is carried out by differential-pressure control using compressed air and without moving parts.

Installation

The Basic series filter systems are exceptionally compact and can be installed quickly with minimal space requirements. The systems are ready for use and can be connected to the cutting plant control system.

Operation

The filtration control system is intuitive. System messages are clearly displayed. The dust collection containers are high capacity and easily removed for content disposal. All system components are easily accessible via maintenance apertures.

BENEFITS

- *High filtration efficiency*
- *Compact design*
- *Noise level below 65 dB(A)*
- *Intelligent cleaning*
- *Low power consumption*
- *Space-saving*
- *Control system with plain text display*
- *Monitoring functions*

OPTIONS

- *Contamination-free dust disposal*
- *SparkTRAP preliminary separator*
- *Permanent dust discharge*
- *Spark detection system*
- *Automated start-stop*



DustEVAC

DUST DISPOSAL

DustEVAC

High-performance cutting systems usually generate a lot of dust. This is separated out in preliminary separators and filter systems and collected in containers. These have to be emptied frequently, often several times a shift. This involves interrupting operations, a lot of dirt in the vicinity of the filter system and major risks to health. In extreme cases systems may break down due to not being emptied in time.

KEMPER's DustEVAC is an excellent answer. It makes uninterrupted operation of the filter system feasible thanks to constant contamination-free dust discharge. The dust from one or more filter systems and preliminary separators linked to it / them is sent to a Big Bag of high capacity via extraction. It can then be disposed of without any contamination risk without interrupting filter system operation.

KEMPER's DustEVAC thus improves cutting efficiency, at the same time considerably reducing operating costs and improves occupational health and safety conditions for staff. A clean all-round solution.



DustEVAC

PRINCIPLE OF OPERATION

- **Extracts dust from filter systems to a BigBag**
- **Residual air is returned to the filter system**
- **BigBags can be sealed and transported by forklift**
- **Simple interim storage or final disposal**
- **Control and monitoring is feasible via the filter system**
- **Central discharge system for multiple filter systems or preliminary separators**

BENEFITS

- **Constant removal of dust from the filter system**
- **Uninterrupted filter system operation**
- **Contamination-free disposal**
- **No moving parts in the extraction piping**
- **High capacity up to 700 litres**
- **BigBags can be moved by forklift**
- **Easy disposal of BigBags**
- **Uninterrupted system operation**
- **Multiple filter system / preliminary separator connections**
- **Major cost reduction**
- **Improved occupational health and safety for staff**



KEMPER GmbH

Von-Siemens-Straße 20
48691 Vreden
Tel.: +49 (0) 2564 / 68-0
Fax: +49 (0) 2564 / 68-120
mail@kemper.eu

