



MRW-FEx robot welding torches

Torch-integrated
welding fume extraction:
No fumes, only clean air!

CLOOS

Weld your way.

Safe and effective extraction of welding fumes directly at the source

The requirements for occupational health and safety measures and safety technology are also continuously increasing in welding technology. The TRGS 528 (Technical Regulations for Hazardous Substances) require welding fumes and harmful substances to be extracted at the point of origin in order to comply with the workplace limit values (AGW) for hazardous substances.

In order to protect your employees from harmful welding fumes, efficient solutions for welding fume extraction are necessary.

The torch extraction system offers a safe and effective extraction of welding fumes directly at the source. Up to 95 percent of the fume is extracted directly during welding at the point of origin near the arc. Your employees benefit from clean air and a better working environment.

With welding fume extraction:

- Comply with the occupational exposure limit value according to the Hazardous Substances Ordinance (GefStoffV).
- Protect your employees from harmful welding fumes.
- Profit from clean air and a better working environment.



without extraction



- **Capture of up to 95 percent of the fume**
- **Annular exhaust air flow around the gas nozzle:**
 - Maintenance of shielding gas coverage of the weld pool
 - Non-influencing of the weld seam quality
 - Functionality even in the case of out-of-position welding
- **Suction slots integrated in the gas nozzle:**
 - Suction power independent of welding direction
 - Hardly any influence on torch weight
- **Slim and compact design for optimum accessibility**
- **Robust connection:**
 - Screwed-on gas nozzle between metal neck and nozzle
 - Designed for the heaviest loads in industrial environments



MIG/MAG Robot welding torch MRW-FEx-510 with integrated welding fume extraction

A long service life of the used components, a slim design and optimum cooling characteristics are the main features of the water-cooled MRW-FEx-510 robot welding torch. The extraction nozzle arranged in a ring around the gas nozzle absorbs up to 95 percent of the fumes produced during welding directly at the point of origin. The fumes are fed directly to a compact high-vacuum filter unit via a flexible hose. The use of the MRW-FEx has hardly any influence on the programming of the robot and there are no specifications regarding the orientation of the extraction torch to the welding direction. The circular extraction enables a constant extraction rate in all welding positions and ensures reliable shielding gas coverage.

- **Long service life:** Designed for the use with 500 A at 100 percent duty cycle at the robot
- **Maximum extraction power:** Up to 95 percent of the fumes are extracted directly at the point of origin.
- **Optimal design:** The use of the fume extraction torch has hardly any influence on the programming of the robot
- **Slim design:** Good accessibility also in narrow components
- **Efficient use:** Low energy consumption of the extraction unit compared to central systems and costly enclosures.



Robot welding torches	MRW-FEx-510
Type of cooling	Liquid-cooled
Capacity with mixed gas	510 A
Capacity with CO ₂	550 A
Duty cycle	100%
Wire thicknesses	0.8-1.6mm
Equipped for wire	1.2 mm
Bending angle	35°
TCP	X78 Z273

MRW-FEx robot welding torches

With a large range of proven and innovative welding processes we offer you solutions for the future providing excellent quality, maximum efficiency and productivity. No matter if thick or thin, steel, chrome-nickel or aluminium – here you find the right welding process for every product requirement.



Efficiency ...



Control Weld

Reliable MIG/MAG welding process for thin and thick materials



Fine Weld

Extremely low spatter MIG/MAG short arc for mixed gas and CO₂ applications



Cold Weld

Heat-reduced MIG/MAG AC pulsed arc for optimum results when welding sensitive materials



Vari Weld

MIG/MAG pulsed arc for optimum welding results even under demanding conditions



Speed Weld

Stable MIG/MAG pulsed arc for numerous applications

QN-CL-FEx-100 extraction and filter unit

The compact and powerful QN-CL-FEx high-vacuum extraction and filter unit is specially designed for operation with the MHG/MHW-Fex manual welding torches as well as the MRW-Fex robot welding torches. The integrated filter has the W3 approval for all weldable materials and is cleaned automatically. Frequent, time-consuming filter changes are no longer necessary and downtimes are avoided. The built-in continuous-run motor enables 24/7 operation of the unit - a perfect prerequisite for use in an industrial environment and in a robot system.



- **W3 approval:** Can be used for all weldable materials
- **Long filter service life:** 5 m² filter area with automatic cleaning for minimum service effort
- **Industrial standard:** High availability due to frequency-controlled continuous-run motor and side channel compressor
- **Maximum efficiency:** Low energy consumption and long filter service life considerably reduce the operating costs.

FEx-100/Fex-200	FEx-100	FEx-200
Dimensions (with/without Räder)	660 x 410 x 560/640 mm	810 x 530 x 690/790 mm
Implementation	Mobile on four wheels, two of which rotate with locking device	
Electrical voltage supply	220...240 V / 50...60 Hz	220...240 V / 50...60 Hz
Motor power [kW]	1.5	3
Maximum volume flow [m ³ h] free blowing	180	250
Maximum volume flow, effective [m ³ h]	65	65
Maximum vacuum [Pa]	36000	38000
Separation rate [%]	IFA > 99.8%	IFA > 99.8%
Active filter surface [m ²]	5	5
Operating temperature	0...50 °C	0...50 °C
Max. DC	100%	100%
Admission	51 mm	51 mm Ø x2
Weight [kg]	45	58
Filter method	Disposable filter	Disposable filter
Certification	CE and W3	CE and W3
Sound pressure level:		
According to DIN 45635-Part 1 at 1 m distance	< 65 db	< 65 db

Reduced investment volume with low operating costs

The use of the extraction torch system results in the following advantages compared to conventional technology:

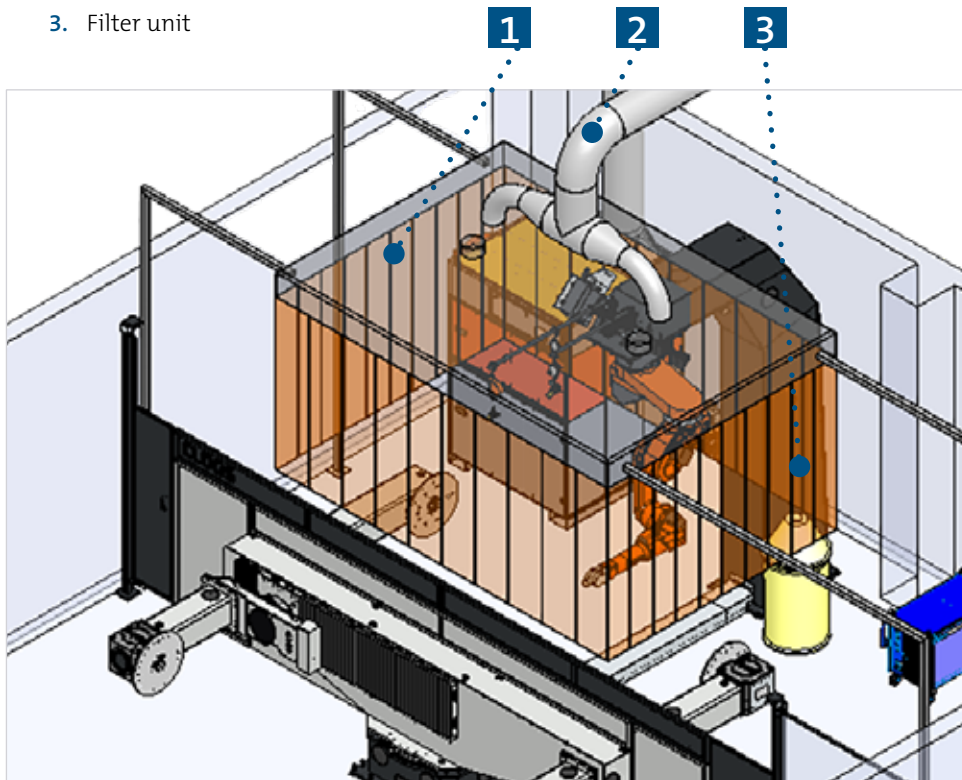
- **Reduced investment costs:** Elimination of the extraction hood and the air control systems
- **Minimised expenditure:** A flexible hose with a small diameter replaces the complex pipe system for discharging the contaminated air to the filter unit
- **Less space required:** Due to the smaller volume of contaminated air, a smaller filter unit is necessary
- **Lower operating costs:** Lower energy consumption (only 1.0 to 1.5 kW)
- **Optimised process flow:** No interference during loading and unloading of the workstations due to extraction hoods or exhaust air ducts



Without fume extraction torch

Layout of a robot system with:

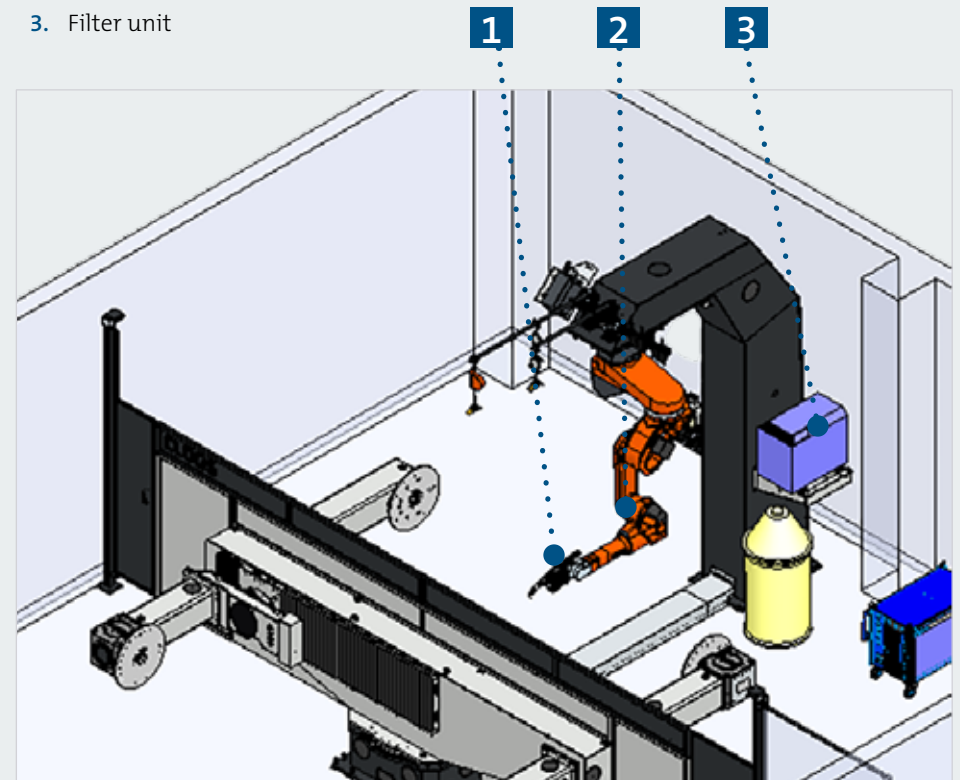
1. Extraction hood with lamella curtain
2. Air guidance system
3. Filter unit



With fume extraction torch

Layout of a robot system with:

1. Fume extraction torch
2. Air guidance system
3. Filter unit



Easy retrofit

All existing robot systems can be retrofitted with the extraction welding torch system without great effort. The available geometries of the extraction welding torches correspond to the geometries of the standard welding torches in use. An extensive correction of the robot welding programs is not required.



Torch-integrated fume extraction also for manual welding

The robust MHW-FEx manual welding torches are available in the capacity classes of 250 and 300 amps (gas-cooled) as well as 320 and 500 amps (water-cooled). The manual welding torches convince by an excellent cooling due to the highly efficient water circuit in the torch body. This allows a very long service life of the consumables. All capacity classes have the same ergonomic handle and are slip-proof in the hand of the welder. The ball joint between handle and cable assembly allows the 30° vertical angular movement combined with 360° swivel movement – both with a stop – for excellent handling. Cables and hoses do not twist and thus remain leak- and break-free.



The way ...

Consulting

With this comprehensive “pre-service”, we take care of your project from the beginning and transfer our integrated process expertise to your component..

Planning

We elaborate a solution which perfectly meets your individual requirements.

Design

Due to the modular design of our product series we develop customised solutions which meet all your production requirements.

Production

Welding machine and robot technology is our strength - including our core competence: the arc.

Commissioning

Our specialists carry out the installation step-by-step in your production hall and test your system for faultless functionality.

Training

We train your employees and service technicians in programming, operation and maintenance in our modern training centre.

Service

Our competence team advises you on any extensions, modifications and retrofits of your existing robot and welding systems.

... to your success.

All over the world

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Subject to technical alterations.

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