



Design and development  
of industrial extraction solutions



CATALOG



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**ENGMAR**

Design and development  
of industrial extraction solutions



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 **Proven expertise since 1993**





**ENGMAR** is specialized in extraction systems for welding and cutting fumes since 1993. Whatever welding processes are used and whatever the industrial constraints, we provide customer specific solutions, enabling both production performance and worker's protection.

A complete range of air- and water-cooled extraction torches for MIG/MAG welding remove welding fumes and gases from the welder's breathing zone and prevent the fumes from entering the general workshop atmosphere.

The extraction torches feature a large range of torch necks and captors as well as an extremely flexible torch assembly assuring very comfortable and ergonomic use. For weight saving reasons, they may be used with swing arms or jib cranes. This season, we shall introduce as an exclusivity our new TIGFLOW welding torches.

ENGMAR systems are suited for environmental and production constraints and are certified by spezialed control structures such as the COSHH (Control of Substances Hazardous to Health). They ensure an effective protection of men at work as well as efficient production tools.

**ENGMAR** offers additional services, such as the installation of our solutions, the training of welders and the maintenance of our torches and installations.





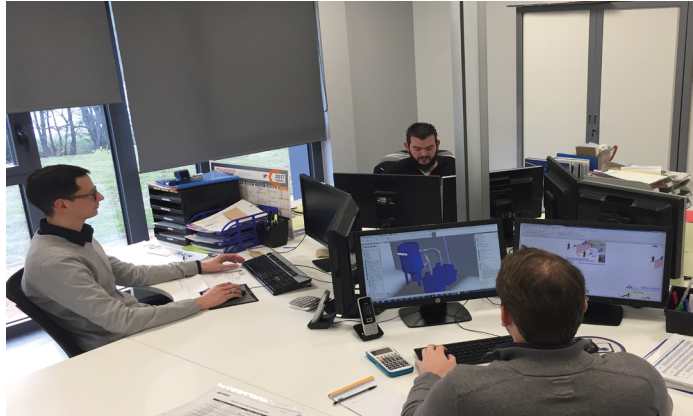
## Our services to support you

### Our engineering office

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**ENGMAR** engineering office designs extraction systems by considering the position and the flow of extraction and fresh air supply devices. In all projects, our engineering office carries out all calculations, diagrams, technical and assembly files, from the design phase to the delivery on site. This includes among others:

- Technical study of the project integrating localized, general ventilation, compensation of the extracted air (preheated if necessary), transportation of polluted air and the treatment of polluted air,
- Design of the site's workshop plan,
- Dimensioning of every flow,
- Dimensioning of filters and piping according to transport speeds,
- Dimensioning of the turbine or centrifugal fan.



### Our engineering office

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#### TRAINING

As an expert in the field of welding and extraction of welding fumes, the training of welders is part of every **ENGMAR** project. After each installation, we provide a staff training to ensure a proper use of equipment and safety of your employees.

This training is based on:

- The awareness of operators and welders on the dangers of welding fumes,
- The learning of first level maintenance procedures of the concerned equipment,
- The knowledge of the main functions of the installation with your maintenance department,
- The safety instructions to follow for a good sustainability of the equipment.

We pay close attention to good welding practices with our extraction torches. For that, welders are trained in their workplaces about the ergonomics and specificities of such product.

Our training courses allow your employees to obtain the professional qualifications and skills required for the smooth running of the installation.





With its integrated **engineering office and production plant**, **ENGMAR** guarantees perfectly adapted French made solutions.

## Maintenance of our installations

**ENGMAR** has a dedicated maintenance service to provide daily support to customers.

### MAINTENANCE OF OUR EXTRACTION TORCHES

A regular maintenance of our welding torches ensures quality weld seams and increases the product lifetime. Maintenance packages include the checking and fixing of the torches. If maintenance offers are not accepted within 2 months, the checking and return of the torche shall be invoiced.

### MAINTENANCE OF EXTRACTION UNITS:

The maintenance of our extraction units via our services ensures a constant extraction flow and protection of the welders. This maintenance includes the cleaning or change of the filters when needed, as well as the checking of the flow and the electrical appliance.





## Our services to support you

# Our services and supplies

### OUR SERVICES:

Articles R.4222-20 and R.4222-21 of the Labor Code require the employer to carry out periodical checks of its extraction system to ensure its maintenance and efficiency.

We offer on-site periodic inspections by a qualified **ENGIMAR** technician. After the visit, a detailed report is drawn up and includes:

- The aeraulic measurements,
- The detailed expertise of main bodies constituting the installation,
- The update of installation folder.

This type of service can be proposed on an annual basis in the form of a periodical control contract. This contract is renewed each year and ensures the safety and compliance of the installation.



### **MAINTENANCE OF HIGH VACUUM INFRASTRUCTURE:**

Since a law from October 8th 1987 concerning regular controls on work place ventilation, yearly flow measures have become compulsory. The purpose of these measures is to compare the present values with the first values after installation.

Two maintenance contracts include the regular check of the compulsory ventilation systems.

#### ***Maintenance contrat Level 1:***

Maintenance contrat Level 1 includes a yearly control of your system, as well as the update of your installation data file including the new measures.

#### ***Maintenance contrat Level 2:***

Maintenance contrat Level 2 includes Maintenance contrat Level 1 services, as well as:

- the renewal of filters on the electrical box (every 3 years)
- the renewal of filter cartridges (every 3 years)
- the renewal of filter electrovalves (every 6 years)
- the renewal of the vacuum breaker valve (every 3 years)

### **MAINTENANCE OF LOW VACUUM INFRASTRUCTURE:**

Two maintenance contracts include the regular check of the compulsory ventilation systems.

#### ***Maintenance contrat Level 1:***

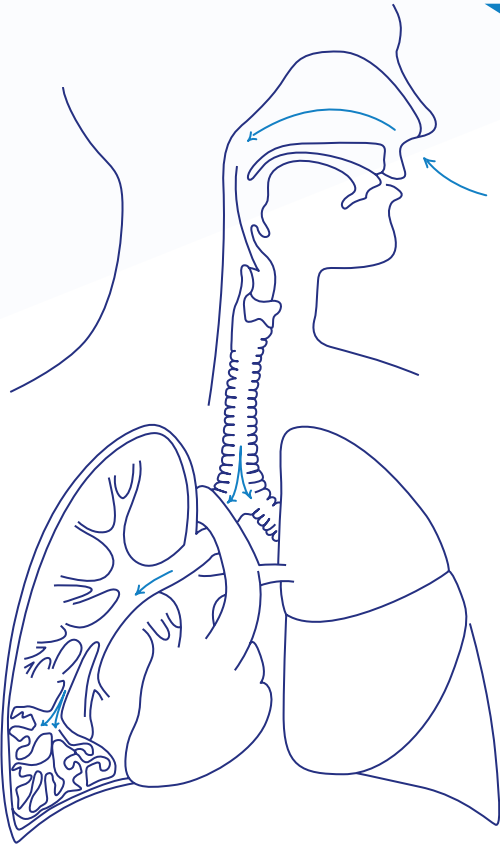
Maintenance contrat Level 1 includes a yearly control of your system, as well as the update of your installation data file including the new measures.

#### ***Maintenance contrat Level 2:***

Maintenance contrat Level 2 includes Maintenance contrat Level 1 services, as well as the replacement of filter cartridges (every 3 years).



## Welding health hazards



Welding fumes are a complex mixture of metals that vary in composition based on the components of the base metal, coatings and/or filler materials and the temperatures used in the welding process.

Adverse health effects associated with welding fumes include short-term illnesses and illnesses resulting from long-term exposure.

In case of prolonged exposure, fumes and gases are responsible for the increase in respiratory, cardiovascular and carcinogenic diseases.

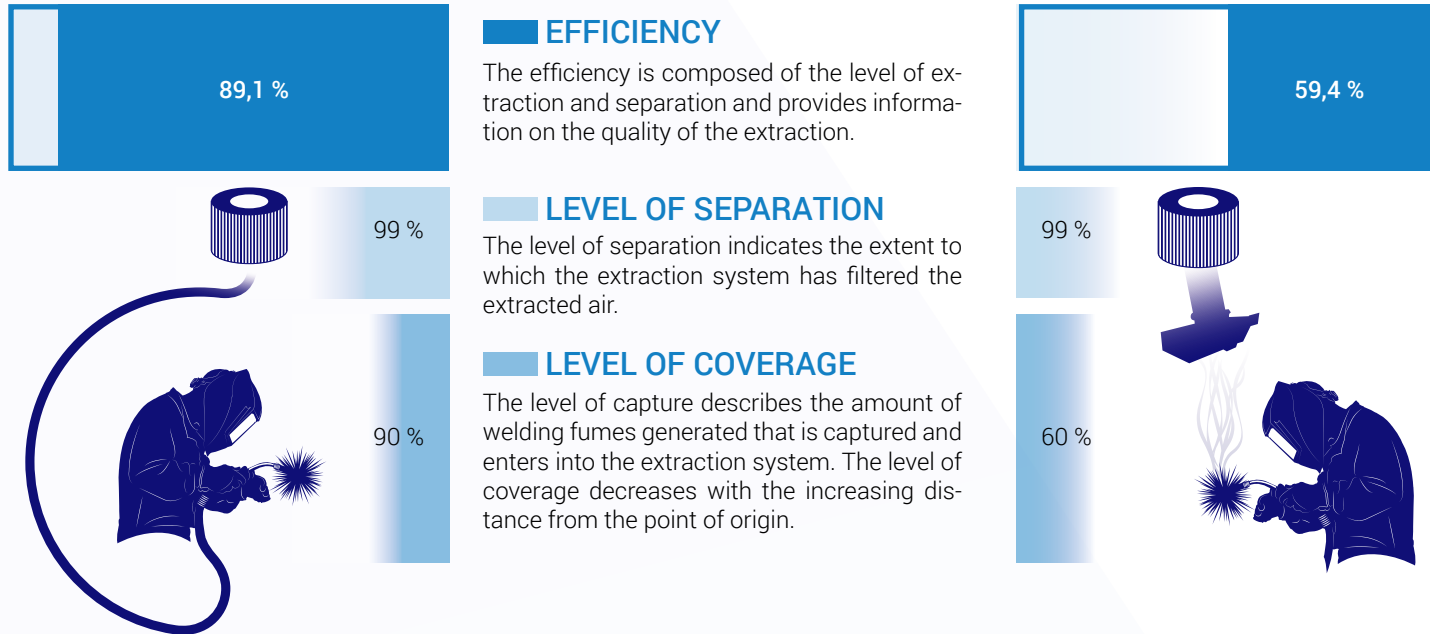
For those reasons, welding fumes require extraction.

The individual particles released during welding are mainly smaller than 1  $\mu\text{m}$  and are therefore alveolar. They play a decisive role in welding health hazards as those particles enter the alveolar pulmonary.

According to studies<sup>1</sup>, **extraction at source** is the most efficient method of fume control in the welding industry. It prevents the fume from entering the general workshop atmosphere and therefore protects not only the welders, but also other workers.

## ► Fume extraction efficiency according to extraction means:

The more the extraction zone is remote from the welding point, the more toxic particles get diluted into the working area, which requires a higher extraction flow.



## Current legislation

Although general ventilation can help to control exposure by reducing background levels of fume, it is ineffective for the control of welder exposure. Consequently, ventilation which removes fume at source, commonly known as local exhaust ventilation, is the recommended method of fume control in the welding industry. Extracting the fume at source protects not only the welder, but also other workers by preventing the fume from entering the general workshop atmosphere. In order to keep the employees free from exposure to a contamination of an airborne chemical agent, the employer must assess the health risks for employees arising from their work. The limits to which welding fume and its component parts must be controlled are provided in national publications or guidance notes and may vary from country to country. The actions arising from the risk assessment are dictated by national legislation.

### ► National regulations related to welding fumes:

- **UK:** The COSHH (Control of Substances Hazardous to Health) regulations dictate measures to assess risks and actions that arise from those risks. The Guidance Note EH40 'Occupational Exposure Limits' provides limits to which welding fume and its component parts must be controlled.
- **Canada:** The COHSR (Canada Occupational Health and Safety Regulations) requires that an employee shall be kept free from exposure to a concentration of an airborne chemical agent in excess of the value for that chemical agent published in 'Threshold Limit Values and Biological Exposure Indices'. This publication is referenced in the Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
- **United States:** OSHA's (Occupational Safety and Health administration) regulations for mechanical ventilation require that welding fumes and smoke must be kept within permissible exposure limits (PEL).
- **Australia:** The WHS (Workplace health and safety) regulations provide guidance on managing the risks of welding processes. Chemicals with workplace exposure standards are listed in the Workplace Exposure Standards for Airborne Contaminants and are also available from the Hazardous Substances Information System (HSIS) on the Safe Work Australia website.

<sup>1</sup> Classed as carcinogenic by the CIRC in 2017. <sup>2</sup>G. Mertuk et al., (2003), Comparing the Effectiveness of Different Systems to Reduce the Amount of Smoke in the Welder Mask, CETIM 1G2870 / RT 37701 Welding Institute



# Guiding principles of welding fume extraction

The installation of a welding fume extraction system should consider:

1

Analysis of the **workplace** and evaluation of the industrial as well as the ergonomic constraints of the welder.

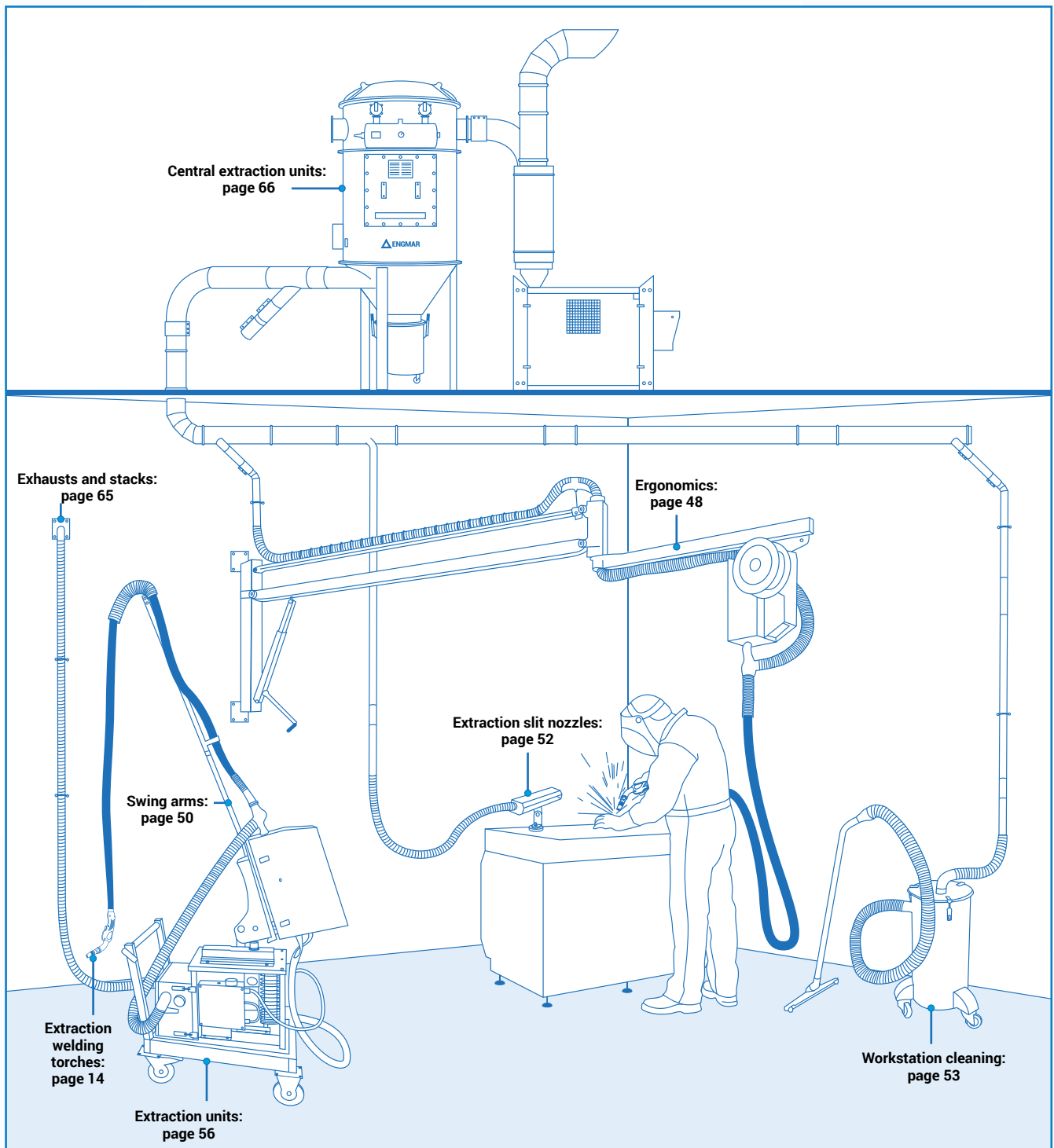
2

**Risk assessment** of all sources of pollution.

3

**Choice and testing** of extraction solutions.

## ► HIGH VACUUM





4

**Validation of the technical solution**  
that extracts welding fumes as close  
as possible to their source in order to  
reduce operators' exposure.

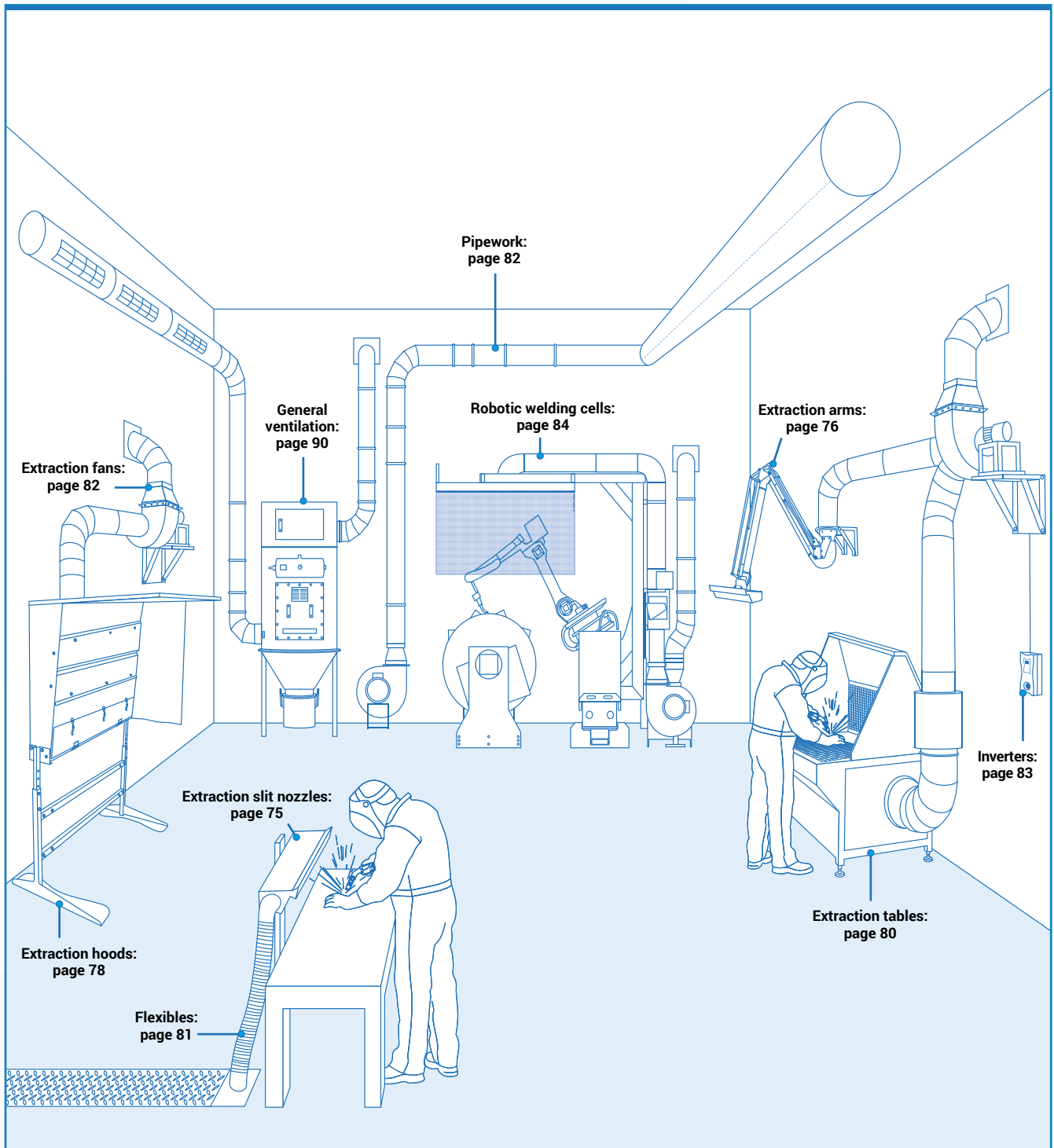
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**Dimensioning of the  
extraction system.**

6

**Evaluation of the required level of  
air treatment and choice of exhaust  
solution.**

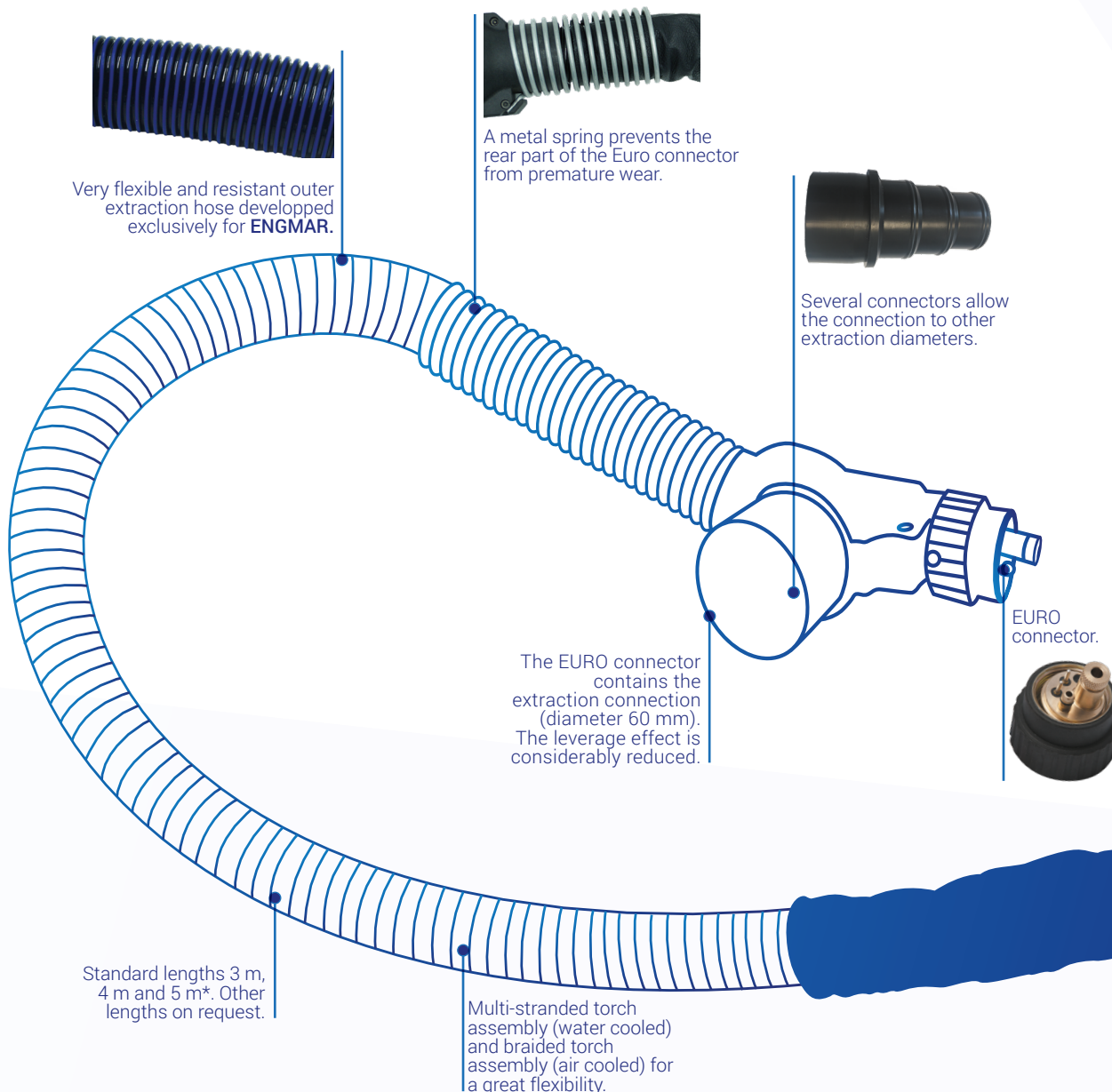
## ► LOW VACUUM

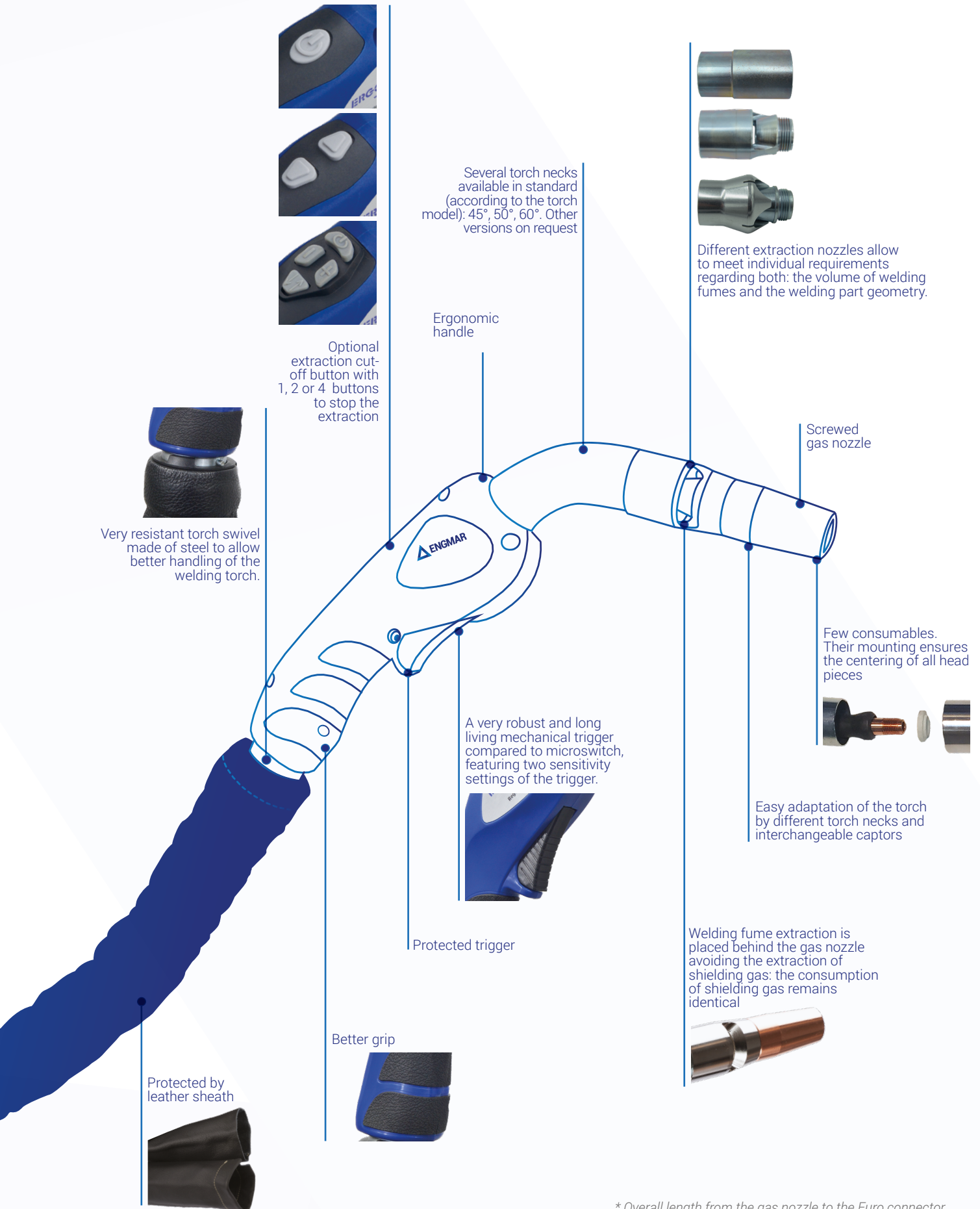


## Welding fume extraction at source - high vacuum **Extraction torches ERGOFLOW MIG/MAG**

# The perfect combination of performance and protection

Protection of welders has always been the main concern of **ENGMAR**. Today, we provide a complete range of solutions for the extraction, filtering and discharge of welding fumes no matter your application or constraints. International legislation recommends extraction at the source of emission. Extraction welding torches perfectly fit that request for MIG/MAG welding. We have been developing and improving the extraction torches that we have been manufacturing for the last 25 years and are providing today a full range of water and gas cooled automatic and manual welding torches from 150 to 500 Amperes. We continue to improve matching the protection of welders and the usability and cost effectiveness of the work tool. Our engineering office, our manufacturing unit, our sales engineers and our specialized sales partners are all awaiting to accompany your company.





\* Overall length from the gas nozzle to the Euro connector.



Welding fume extraction at source - high vacuum


## Extraction torches ERGOFLOW MIG/MAG

Our complete range of air and water cooled extraction torches for MIG/MAG welding (150 to 500 A) removes welding fumes and gases from the welder's breathing zone and prevents the fumes from entering the general workshop atmosphere. Different nozzle types and torch necks in combination with a very flexible torch assembly give **ENGMAR** extraction welding guns excellent ergonomic and efficiency – even in case of intensive welding or difficult access. The standard torch head angles (according to the torch model) are 45°, 50° and 60° and can be equipped with different extraction nozzles. They allow to adapt the welding torch to the individual volume of welding fumes as well as to the individual geometry of the welding parts.

Our torches are compliant with the following harmonized standards: EN60974-1 (low voltage) and EN61000-6-2 & EN61000-6-4 (electromagnetic compatibility).

## AIR cooled extraction welding torches



- Torch equipped with a high capacity fume schroud for the most efficient extraction
- Braided hose cooled by extraction
- Torch neck cooled by extraction
- Leather sheath length 1.4M on the front side of the torch
- Light flexible polyurethane tube on the front of the torch / Shape memory flexible tube on the back of the torch, resisting to clogging and abrasion
- Euro connector
- Torches from 380A as well as the 5M ones are provided with a high vacuum extraction hose Ø 50mm on the side of the connector
- FL250 torches for low amperage allow the use of standard outer tubes or with reduced diameters for welding in confined areas. 2 types of gas nozzles can be used.
- The torch is delivered with its liner.

Cooling	Torch model	Gas	Power*	Duty cycle	Wire diameter recommendation	Extraction hose diameter
 AIR	FL 250	CO <sub>2</sub>	220 A	60%	0.8 - 1.2 mm	40 mm
		Argon/CO <sub>2</sub>	180 A			
	FL 350	CO <sub>2</sub>	340 A		1.0 - 1.6 mm	40 mm
		Argon/CO <sub>2</sub>	300 A			
	FL 380	CO <sub>2</sub>	400 A		1.0 - 1.6 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	340 A			
	FL 400	CO <sub>2</sub>	500 A		1.2 - 1.6 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	440 A			
	FL 420	CO <sub>2</sub>	440 A		de 0.8 à 1.6 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	440 A			
	WELDING TORCH FOR SPECIFIC APPLICATIONS FL 200	CO <sub>2</sub>	180 A		0.6 - 1.2 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	130 A			

\*In pulse mode, these values are reduced by 35%.

Other versions on request.


## ► Practice recommendation

Industry sector	Sheet thickness	AIR cooled extraction torch 	Water cooled extraction torch 
Sheet metal working	> 1 - 2 mm	FLP210 (FL 250 incl. kit KTS2521P)	FRMP210 (FRM 250 incl. kit KTS2521P)
Metalworking, building hardware	> 3 - 5 mm	FL 250	FRM 250
Mechanical welding	> 6 - 7 mm	FL 300*/FL 350 or FL 420	FRM 350 or FRM 420
Metal construction	> 8 - 15 mm	FL 380 or FL 420	FRM 380 or FRM 420
Metal framework / reinforcement	>	FL 200	-
Overlay welding (cladding)	>	FL 400 or FL 420	SRM 400 or FRM 420

\*Please refer to us.

## Water cooled welding torch

- Torch supplied with high capacity fume shroud for the best extraction efficiency
- Water cooled braided hose
- Torch neck cooled by water and extraction
- Leather sheath length 1.4M on the front side of the torch
- Light flexible polyurethane tube on the front of the torch (Ø 40 mm)  
/ Shape memory flexible tube on the back of the torch, resisting to clogging and abrasion (Ø 50 mm)
- Euro connector
- 250 and 350 torches are particularly suited for pulsed welding
- The torch is delivered with its liner.

Cooling	Torch model	Gas	Power*	Duty cycle	Wire diameter recommendation	Extraction hose diameter
 WATER	FRM 250	CO <sub>2</sub>	240 A	100%	0.8 - 1.2 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	200 A			
	FRM 350	CO <sub>2</sub>	350 A		1.0 - 1.6 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	300 A			
	FRM 380	CO <sub>2</sub>	400 A		1.2 - 1.6 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	340 A			
	FRM 400	CO <sub>2</sub>	500 A		1.2 - 1.6 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	440 A			
	FRM 420	CO <sub>2</sub>	440 A		de 0.8 à 1.6 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	440 A			
	ATRMP 380	CO <sub>2</sub>	400 A		1.2 - 1.6 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	340 A			
WELDING TORCH FOR SPECIFIC APPLICATIONS	ATRMP 400	CO <sub>2</sub>	500 A		1.2 - 1.6 mm	40 - 50 mm
		Argon/CO <sub>2</sub>	440 A			

Other versions on request.

# Welding fume extraction at source - high vacuum

## Extraction torches ERGOFLOW MIG/MAG

### Torches 250



50° short torch neck

CE EN 60974 -7

### FL 250



#### TECHNICAL DETAILS

Power with CO <sub>2</sub> :	220 A
Duty cycle with CO <sub>2</sub> :	60%
Power with Argon / CO <sub>2</sub> :	180 A
Duty cycle with Argon / CO <sub>2</sub> :	60%
Recommendation welding wire (mm):	0.8 - 1.2
Extraction hose diameter (mm):	40
Minimum nozzle flow rate (Nm <sup>3</sup> /h):	75
Required pressure (sea level) (KPa):	77.5
Difference in flow rates between the head and the T (Nm <sup>3</sup> /h):	22.2

	45° long torch neck	50° short torch neck
3 m >	FLG253040-45	FLG253040
4 m >	FLG254040-45	FLG254040
5 m >	FLG255040-45	FLG255040

### FRM 250



#### TECHNICAL DETAILS

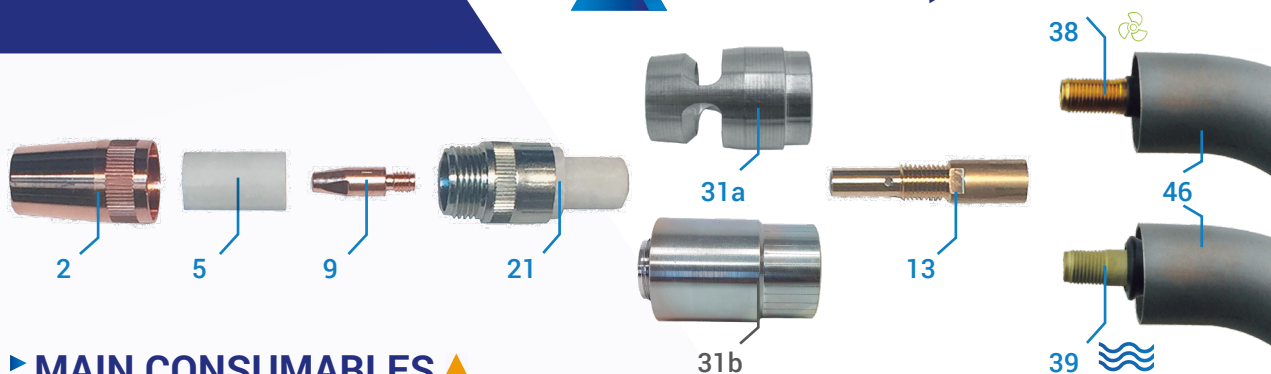
Power with CO <sub>2</sub> :	240 A
Duty cycle with CO <sub>2</sub> :	100%
Power with Argon / CO <sub>2</sub> :	200 A
Duty cycle with Argon / CO <sub>2</sub> :	100%
Recommendation welding wire (mm):	0.8 - 1.2
Extraction hose diameter (mm):	40 - 50
Minimum nozzle flow rate (Nm <sup>3</sup> /h):	75
Required pressure (sea level) (KPa):	77
Difference in flow rates between the head and the T (Nm <sup>3</sup> /h):	13

	45° long torch neck	50° short torch neck
3 m >	FRMG253050-45	FRMG253050
4 m >	FRMG254050-45	FRMG254050
5 m >	FRMG255050-45	FRMG255050

Other versions on request.

Please refer to page 35 of this catalogue giving you an overview of the cut-off button options and additional leather protections.





## ► MAIN CONSUMABLES ▲

Number	Description	Product code		
2	> Gas nozzle copper 180-250 Ø12 mm	202512		
2	> Gas nozzle copper 180-250 Ø14 mm	202514		
2	> Gas nozzle copper 180-250 Ø16 mm	202516		
5	> Gas nozzle insulating sleeve 180-250	320100		
Number	Description	Product code	Wire 1.0 mm	Wire 1.2 mm
9	> Contact tip ECU Ø8 M6 L 28 mm	50 02 08	50 02 10	50 02 12
9	> Contact tip CuCrZr Ø8 M6 L 28 mm	0020672008	0020672010	0020672012

## ► HEAD PIECES ▲

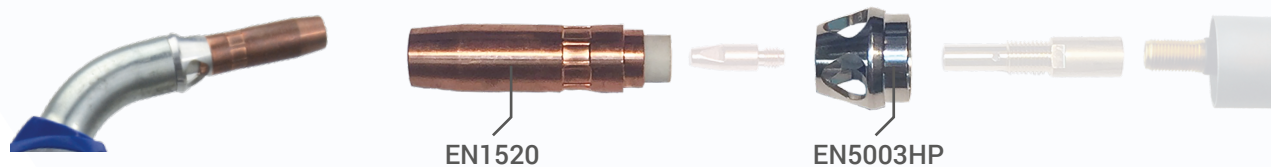
Number	Description	Product code
21	> Insulated nozzle holder 180/250	EN7001
31a	> Optimum fume shroud 250	EN7003GC
31b	> Cone fume shroud 250	EN7003C
13	> Gas diffuser 150 for contact tips M6	601815

## ► TORCH NECKS AND FUME TUBES ▲

Number	Description	45°	50°
38	> Air cooled torch neck 250	1102545	1102550
39	> Water cooled torch neck 250	EN2232545	EN2232550
46	> Fume tube 350	1203545	1203550

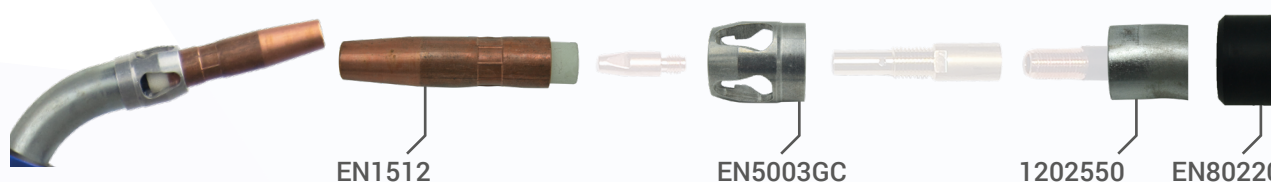
## ► LINERS ▲ (more information page 33)

## ► FLP210/FRMP210 TRANSFORMATION KIT ▲



Description	Product code
> FLP210 Transformation kit	KTS2521P

## ► FLG150 TRANSFORMATION KIT ▲



Description	Product code
> FLG150 Transformation kit	KTS2515S



# Welding fume extraction at source - high vacuum **Extraction torches ERGOFLOW MIG/MAG**

## Torches 350

### FL 350



#### TECHNICAL DETAILS

Power with CO <sub>2</sub> :	340 A
Duty cycle with CO <sub>2</sub> :	60%
Power with Argon / CO <sub>2</sub> :	300 A
Duty cycle with Argon / CO <sub>2</sub> :	60%
Recommendation welding wire (mm):	1.0 - 1.6
Extraction hose diameter (mm):	40 - 50
Minimum nozzle flow rate (Nm <sup>3</sup> /h):	92
Required pressure (sea level) (KPa):	126
Difference in flow rates between the head and the T (Nm <sup>3</sup> /h):	22.3

#### 45° long torch neck

#### 50° short torch neck

3 m >	FLE353040-45	FLE353040
4 m >	FLE354040-45	FLE354040
5 m >	FLE355050-45	FLE355050

### FRM 350



#### TECHNICAL DETAILS

Power with CO <sub>2</sub> :	350 A
Duty cycle with CO <sub>2</sub> :	100%
Power with Argon / CO <sub>2</sub> :	300 A
Duty cycle with Argon / CO <sub>2</sub> :	100%
Recommendation welding wire (mm):	1.0 - 1.6
Extraction hose diameter (mm):	40 - 50
Minimum nozzle flow rate (Nm <sup>3</sup> /h):	92
Required pressure (sea level) (KPa):	142.5
Difference in flow rates between the head and the T (Nm <sup>3</sup> /h):	21.3

#### 45° long torch neck

#### 50° short torch neck

3 m >	FRME353050-45	FRME353050
4 m >	FRME354050-45	FRME354050
5 m >	FRME355050-45	FRME355050

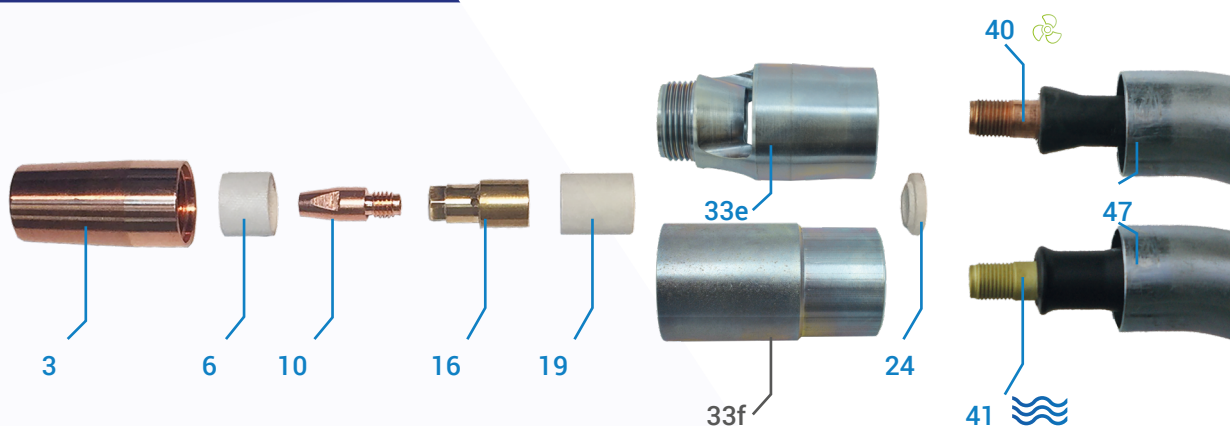


50° short torch neck

**CE** **EN 60974 -7**

Other versions on request.

Please refer to page 35 of this catalogue giving you an overview of the cut-off button options and additional leather protections.



## ► MAIN CONSUMABLES ▲

Number	Description	Product code
3	> Tellurium gas nozzle 350 Ø12	EN203512T
3	> Tellurium gas nozzle 350 Ø14	EN203514T
3	> Tellurium gas nozzle 350 Ø16	EN203516T
3	> Tellurium gas nozzle 350 Ø18	EN203518T
6	> Gas nozzle insulating sleeve 350	EN320200

Number	Description	Wire 1.0 mm	Wire 1.2 mm	Wire 1.4 mm	Wire 1.6 mm
10	> Contact tip ECU Ø10 M8 L 30 mm	50 04 10	50 04 12	50 04 14	50 04 16
10	> Contact tip CuCrZr Ø10 M8 L 30 mm	50 06 10	50 06 12	50 06 14	50 06 16

## ► HEAD PIECES ▲

Number	Description	Product code
16	> Diffuser 350 for contact tips M8	600300
19	> Diffuser insulator 350	EN720100
33e	> Fume shroud with nozzle holder 350	EN8003E
33f	> Cone fume shroud 350	EN8003C
24	> Insulator for gas nozzle 350	900400

## ► TORCH NECKS AND FUME TUBES ▲

Number	Description	45°	50°
40	> Air cooled torch neck 350	1103545	1103550
41	> Water cooled torch neck 350	EN2233545	EN2233550
47	> Fume tube 350	1203545	1203550

## ► LINERS ▲ (more information page 33)

Description	3 m	4 m	5 m
Steel liner (round) for steel wire 0.6 mm to 1.0 mm	1013310	1014310	1015310
Red steel liner (round) for steel wire 1.0 mm to 1.2 mm	1023312	1024312	1025312
Yellow standard liner (round) for steel wire 1.2 mm to 1.6 mm	1033316	1034316	1035316
Teflon liner for aluminium wire 1.2 mm to 1.6 mm	ENW005922	ENW005939	ENW005945

# Welding fume extraction at source - high vacuum **Extraction torches ERGOFLOW MIG/MAG**

## Torches 380

### FL 380



#### TECHNICAL DETAILS

Power with CO <sub>2</sub> :	400 A
Duty cycle with CO <sub>2</sub> :	60%
Power with Argon / CO <sub>2</sub> :	340 A
Duty cycle with Argon / CO <sub>2</sub> :	60%
Recommendation welding wire (mm):	1.2 - 1.6
Extraction hose diameter (mm):	40 - 50
Minimum nozzle flow rate (Nm³/h):	92
Required pressure (sea level) (KPa):	134.5
Difference in flow rates between the head and the T (Nm³/h):	23.4
45° long torch neck	50° short torch neck
3 m > FLE383050-45	FLE383050
4 m > FLE384050-45	FLE384050
5 m > FLE385050-45	FLE385050

### FRM 380



#### TECHNICAL DETAILS


Power with CO <sub>2</sub> :	400 A	
Duty cycle with CO <sub>2</sub> :	100%	
Power with Argon/CO <sub>2</sub> :	340 A	
Duty cycle with Argon/CO <sub>2</sub> :	100%	
Recommendation welding wire (mm):	1.2 - 1.6	
Extraction hose diameter (mm):	40 - 50	
Minimum nozzle flow rate (Nm <sup>3</sup> /h):	92	
Required pressure (sea level) (KPa):	142	
Difference in flow rates between the head and the T (Nm <sup>3</sup> /h):	21.3	
	45° long torch neck	50° short torch neck
3 m >	FRME383050-45	FRME383050
4 m >	FRME384050-45	FRME384050
5 m >	FRME385050-45	FRME385050

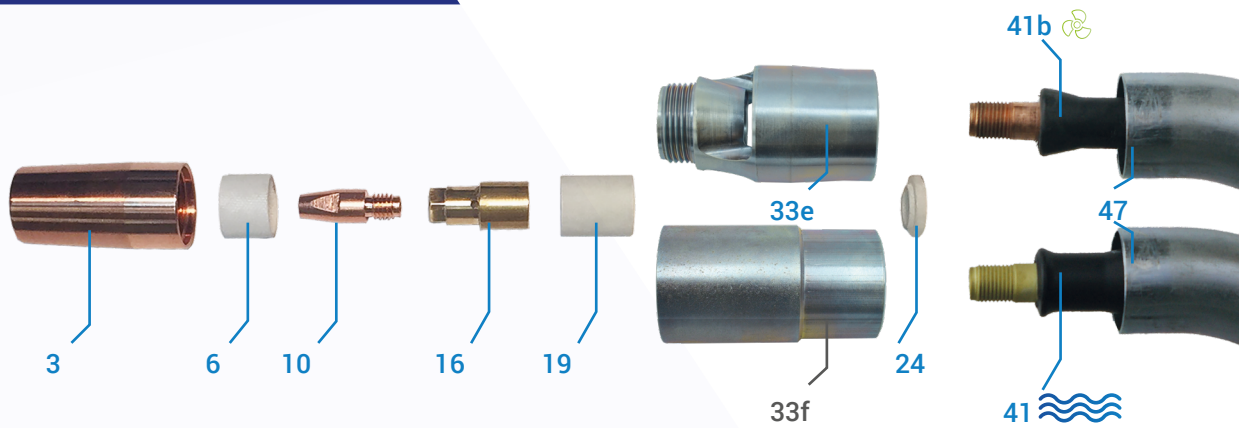
Other versions on request.

Please refer to page 35 of this catalogue giving you an overview of the cut-off button options and additional leather protections.



45° long torch neck

 **EN 60974 -7**



## ► MAIN CONSUMABLES ▲

Number	Description	Product code
3	> Tellurium gas nozzle 350 Ø12	EN203512T
3	> Tellurium gas nozzle 350 Ø14	EN203514T
3	> Tellurium gas nozzle 350 Ø16	EN203516T
3	> Tellurium gas nozzle 350 Ø18	EN203518T
6	> Gas nozzle insulating sleeve 350	EN320200

Number	Description	Wire 1.0 mm	Wire 1.2 mm	Wire 1.4 mm	Wire 1.6 mm
10	> Contact tip ECU Ø10 M8 L 30 mm	50 04 10	50 04 12	50 04 14	50 04 16
10	> Contact tip CuCrZr Ø10 M8 L 30 mm	50 06 10	50 06 12	50 06 14	50 06 16

## ► HEAD PIECES ▲

Number	Description	Product code
16	> Diffuser 350 for contact tips M8	600300
19	> Diffuser insulator 350	EN720100
33e	> Fume shroud with nozzle holder 350	EN8003E
33f	> Cone fume shroud 350	EN8003C
24	> Insulator for gas nozzle 350	900400

## ► TORCH NECKS AND FUME TUBES ▲

Number	Description	45°	50°
41b	> Air cooled torch neck 350	1103545	1103550
41	> Water cooled torch neck 350	EN2233545	EN2233550
47	> Fume tube 350	1203545	1203550

## ► LINERS ▲ (more information page 33)

Description	3 m	4 m	5 m
Steel liner (round) for steel wire 0.6 mm to 1.0 mm	1013310	1014310	1015310
Red steel liner (round) for steel wire 1.0 mm to 1.2 mm	1023312	1024312	1025312
Yellow standard liner (round) for steel wire 1.2 mm to 1.6 mm	1033316	1034316	1035316
Teflon liner for aluminium wire 1.2 mm to 1.6 mm	ENW005922	ENW005939	ENW005945



# Welding fume extraction at source - high vacuum **Extraction torches ERGOFLOW MIG/MAG**

## Torches 400 ▲



45° Model

**CE** EN 60974 -7

### FL 400



#### TECHNICAL DETAILS

Power with CO <sub>2</sub> :	500 A
Duty cycle with CO <sub>2</sub> :	60%
Power with Argon / CO <sub>2</sub> :	440 A
Duty cycle with Argon / CO <sub>2</sub> :	60%
Recommendation welding wire (mm):	1.2 - 1.6
Extraction hose diameter (mm):	40 - 50
Minimum nozzle flow rate (Nm <sup>3</sup> /h):	58
Required pressure (sea level) (KPa):	69.3
Difference in flow rates between the head and the T (Nm <sup>3</sup> /h):	9.3

	45° Model	60° Model
3 m >	FLC403050-45	FLC403050-60
4 m >	FLC404050-45	FLC404050-60
5 m >	FLC405050-45	FLC405050-60

### FRM 400



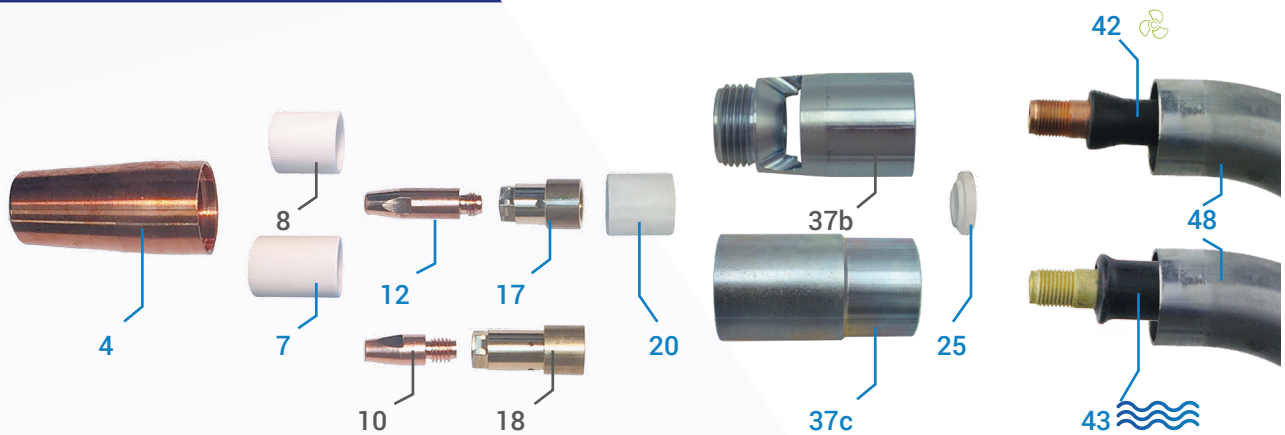
#### TECHNICAL DETAILS

Power with CO <sub>2</sub> :	500 A
Duty cycle with CO <sub>2</sub> :	100%
Power with Argon / CO <sub>2</sub> :	440 A
Duty cycle with Argon / CO <sub>2</sub> :	100%
Recommendation welding wire (mm):	11.2 - 1.6
Extraction hose diameter (mm):	40 - 50
Minimum nozzle flow rate (Nm <sup>3</sup> /h):	58
Required pressure (sea level) (KPa):	70.7
Difference in flow rates between the head and the T (Nm <sup>3</sup> /h):	9.3

	45° Model	60° Model
3 m >	FRMC403050-45	FRMC403050-60
4 m >	FRMC404050-45	FRMC404050-60
5 m >	FRMC405050-45	FRMC405050-60

Other versions on request.

Please refer to page 35 of this catalogue giving you an overview of the cut-off button options and additional leather protections.



## ► MAIN CONSUMABLES ▲

Number	Description	Product code
4	> Gas nozzle CuCrZr 400 Ø13	EN200013
4	> Tellurium gas nozzle 400 Ø16	EN200016T
4	> Tellurium gas nozzle 400 Ø19	EN200019T
7	> Insulating sleeve Ø13 450	EN320300
8	> Insulating sleeve Ø16 and Ø19 450	EN320400

Number	Description	Wire 1.2 mm	Wire 1.4 mm	Wire 1.6 mm
10	> Contact tip ECU Ø10 M8 L 30 mm	50 04 12	50 04 14	50 04 16
10	> Contact tip CuCrZr Ø10 M8 L 30 mm	50 06 12	50 06 14	50 06 16
12	> Contact tip CuCrZr Ø10 5/16" L 37.5 mm	EN500312	-	EN500316

## ► HEAD PIECES ▲

Number	Description	Product code
17	> Short gas diffuser 400 for contact tips 5/16"	600200
18	> Long gas diffuser 400 for contact tips M8	610300
20	> Insulator for diffuser 400	EN710200
37b	> Fume shroud with nozzle holder 400	EN9003E
37c	> Cone fume shroud 350	EN9003C
25	> Insulator for nozzle holder 400	900300

## ► TORCH NECKS AND FUME TUBES ▲

Number	Description	45°	60°
42	> Air cooled torch neck 400	1104045	1104060
43	> Water cooled torch neck 400	EN2234045	EN2234060
48	> Fume tube 400	1204045	1204060

## ► LINERS ▲ (more information page 33)

Description	3 m	4 m	5 m
Steel liner (round) for steel wire 0.6 mm to 1.0 mm	1013310	1014310	1015310
Red steel liner (round) for steel wire 1.0 mm to 1.2 mm	1023312	1024312	1025312
Yellow standard liner (round) for steel wire 1.2 mm to 1.6 mm	1033316	1034316	1035316
Teflon liner for aluminium wire 1.2 mm to 1.6 mm	ENW005922	ENW005939	ENW005945

# Welding fume extraction at source - high vacuum **Extraction torches ERGOFLOW MIG/MAG**

## Torches 420 ▲



Modèle 45°

**CE** **EN 60974 -7**

### FL 420



#### **TECHNICAL DETAILS**

Power with CO <sub>2</sub> :	500 A
Duty cycle with CO <sub>2</sub> :	60%
Power with Argon/CO <sub>2</sub> :	440 A
Duty cycle with Argon/CO <sub>2</sub> :	60%
Recommendation welding wire (mm):	0.8 - 1.6
Extraction hose diameter (mm):	50
Minimum nozzle flow rate (Nm <sup>3</sup> /h):	85
Required pressure (sea level) (KPa):	101.8
Difference in flow rates between the head and the T (Nm <sup>3</sup> /h):	22.2

#### 45° Model

3 m >	FLS423050-45
4 m >	FLS424050-45
5 m >	FLS425050-45

### FRM 420



#### **TECHNICAL DETAILS**

Power with CO <sub>2</sub> :	500 A
Duty cycle with CO <sub>2</sub> :	100%
Power with Argon/CO <sub>2</sub> :	440 A
Duty cycle with Argon/CO <sub>2</sub> :	100%
Recommendation welding wire (mm):	0.8 - 1.6
Extraction hose diameter (mm):	50
Minimum nozzle flow rate (Nm <sup>3</sup> /h):	85
Required pressure (sea level) (KPa):	101.8
Difference in flow rates between the head and the T (Nm <sup>3</sup> /h):	22.2

#### 45° Model

3 m >	FRMS423050-45
4 m >	FRMS424050-45
5 m >	FRMS425050-45

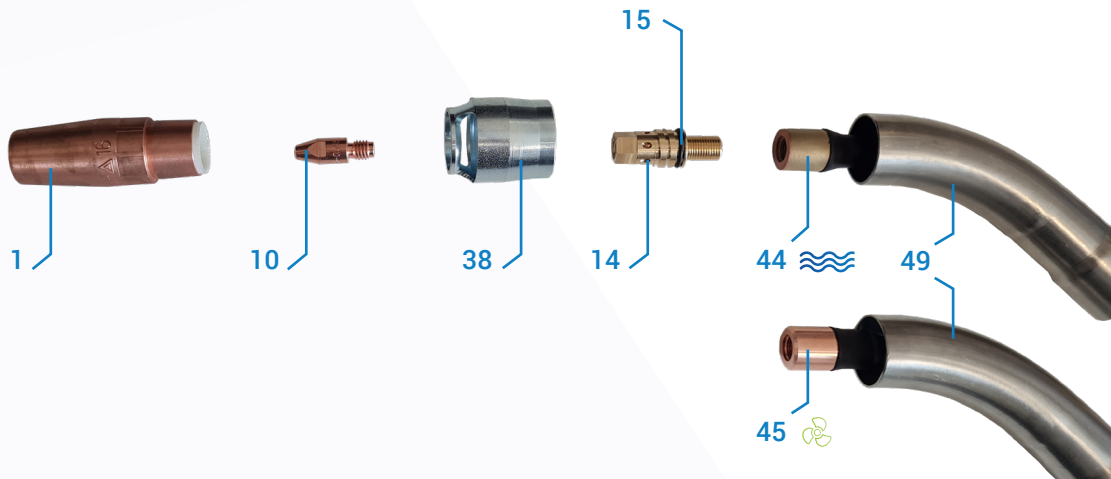
#### 50° Model

3 m >	FRMS423050
4 m >	FRMS424050
5 m >	FRMS425050

Other versions on request.

Please refer to page 35 of this catalogue giving you an overview of the cut-off button options and additional leather protections.





## ► MAIN CONSUMABLES ▲

Number	Description	Product code
1	Gas nozzle Ø14	EN204214
1	Gas nozzle Ø16	EN204216

Number	Description	Fil 10/10°	Fil 12/10°	Fil 14/10°	Fil 16/10°
10	Contact tip ECU Ø10 M8 L 30 mm	50 04 10	50 04 12	50 04 14	50 04 16
10	Contact tip CuCrZr Ø10 M8 L 30 mm	50 06 10	50 06 12	50 06 14	50 06 16

## ► HEAD PIECES ▲

Number	Description	Product code
14	Gas diffuser	600400
15	O-ring	600400J
39	Standard fume shroud 420A	EN9004

## ► TORCH NECK AND FUME TUBES ▲

Number	Description	45°	50°
44	Water cooled torch neck 420A	EN2234245	EN2234250
45	Air cooled torch neck 420A	1104245	\
49	Fume tube 420A	1204245	1204250

## ► LINERS ▲ (more information page 37)

Description	3 m	4 m	5 m
Blue steel liner (round) for steel wire 0.6 mm to 1.0 mm	1013310	1014310	1015310
Red steel liner (round) for steel wire 1.0 mm to 1.2 mm	1023312	1024312	1025312
Yellow standard liner (round) for steel wire 1.2 mm to 1.6 mm	1033316	1034316	1035316
Teflon liner for aluminium wire 1.2 mm to 1.6 mm	ENW005922	ENW005939	ENW005945

# Welding fume extraction at source - high vacuum **Extraction torches ERGOFLOW MIG/MAG**

## Special torch 200 ▲

FL 200



### TECHNICAL DETAILS

This torch is specially created for short welding seams (spot welding or other). Its torch assembly for low powers in combination with its high volume fume shroud allow high velocities and perfect heat removal. That's why extraction performance is optimal right from the start and even for metal framework welding.

Power with CO <sub>2</sub> :	180 A
Duty cycle with CO <sub>2</sub> :	100%
Power with Argon / CO <sub>2</sub> :	130 A
Duty cycle with Argon / CO <sub>2</sub> :	100%
Recommendation welding wire (mm):	0.6 - 1.2
Extraction hose diameter (mm):	40 - 50

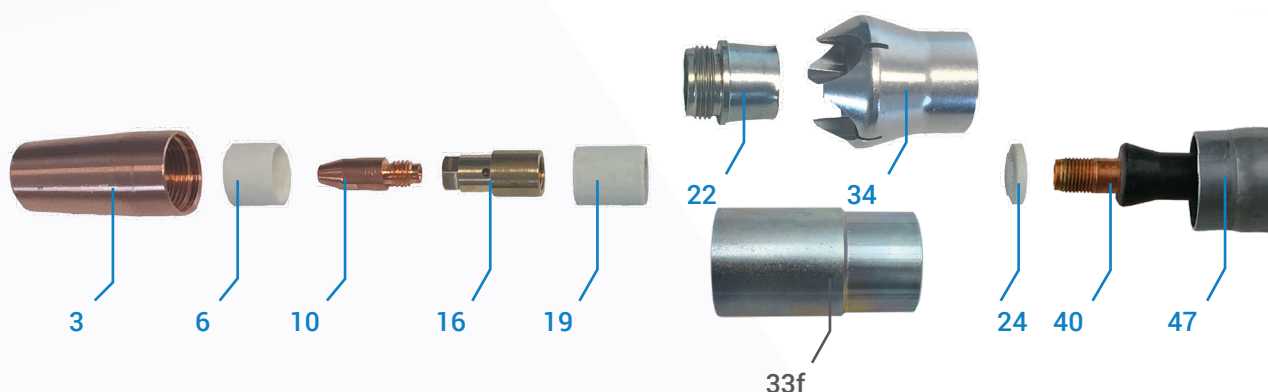


50° Model



**CE** EN 60974 -7

Other versions on request.


Please refer to page 35 of this catalogue giving you an overview of the cut-off button options and additional leather protections.








## ► MAIN CONSUMABLES ▲

Number	Description	Product code
3	> Tellurium gas nozzle 350 Ø12	EN203512T
3	> Tellurium gas nozzle 350 Ø14	 EN203514T
3	> Tellurium gas nozzle 350 Ø16	EN203516T
3	> Tellurium gas nozzle 350 Ø18	EN203518T
6	> Gas nozzle insulating sleeve 350	 EN320200

Number	Description	Wire 0.8 mm	Wire 1.0 mm	Wire 1.2 mm
10	> Contact tip ECU Ø10 M8 L 30 mm	50 04 08	50 04 10	 50 04 12
10	> Contact tip CuCrZr Ø10 M8 L 30 mm	50 06 08	50 06 10	50 06 12

## ► HEAD PIECES ▲

Number	Description	Product code
16	> Diffuser 350 for contact tips M8	 600300
19	> Diffuser insulator 350	 EN720100
22	> Gas nozzle holder 350	 EN8002
34	> Maximum fume shroud 350	 EN8003HP
33f	> Cone fume shroud 350	EN8003C
24	> Insulator for gas nozzle 350	 900400

## ► TORCH NECKS AND FUME TUBES ▲

Number	Description	45°	50°
40	> Torch neck 350	 1103545	 1103550
47	> Fume tube 350	 1203545	 1203550

## ► LINERS ▲ (more information page 6)

Description	3 m	4 m	5 m
Steel liner (round) for steel wire 0.6 mm to 1.0 mm	1013310	1014310	1015310
Red steel liner (round) for steel wire 1.0 mm to 1.2 mm	 1023312	 1024312	 1025312
Yellow standard liner (round) for steel wire 1.2 mm to 1.6 mm	1033316	1034316	1035316
Teflon liner for aluminium wire 1.2 mm to 1.6 mm	ENW005922	ENW005939	ENW005945



# **Extraction torches ERGOFLOW MIG/MAG**

## Automatic Torch 380 ▲



ATRMP380



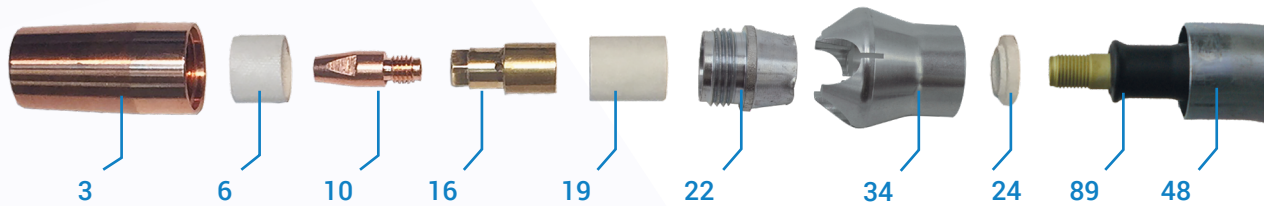
### ⚙️ TECHNICAL DETAILS

Power with CO <sub>2</sub> :	400 A
Duty cycle with CO <sub>2</sub> :	100%
Power with Argon / CO <sub>2</sub> :	340 A
Duty cycle with Argon / CO <sub>2</sub> :	100%
Recommendation welding wire (mm):	1.2 - 1.6
Extraction hose diameter (mm):	40

	0° Model	45° Model
3 m >	ATRMP383050-D	ATRMP383050-45
4 m >	ATRMP384050-D	ATRMP384050-45

0° Model - Other versions on request.

CE EN 60974 -7



## ► MAIN CONSUMABLES ▲

Number	Description	Product code
3	> Tellurium gas nozzle 350 Ø12	EN203512T
3	> Tellurium gas nozzle 350 Ø14	EN203514T
3	> Tellurium gas nozzle 350 Ø16	EN203516T
3	> Tellurium gas nozzle 350 Ø18	EN203518T
6	> Gas nozzle insulating sleeve 350	EN320200

Number	Description	Wire 1.0 mm	Wire 1.2 mm	Wire 1.4 mm	Wire 1.6 mm
10	> Contact tip ECU Ø10 M8 L 30 mm	50 04 10	50 04 12	50 04 14	50 04 16
10	> Contact tip CuCrZr Ø10 M8 L 30 mm	50 06 10	50 06 12	50 06 14	50 06 16

## ► HEAD PIECES ▲

Number	Description	Product code
16	> Diffuser 350 for contact tips M8	600300
19	> Diffuser insulator 350	EN720100
22	> Gas nozzle holder 350	EN8002
34	> Maximum fume shroud 350	EN8003HP
24	> Insulator for gas nozzle 350	900400

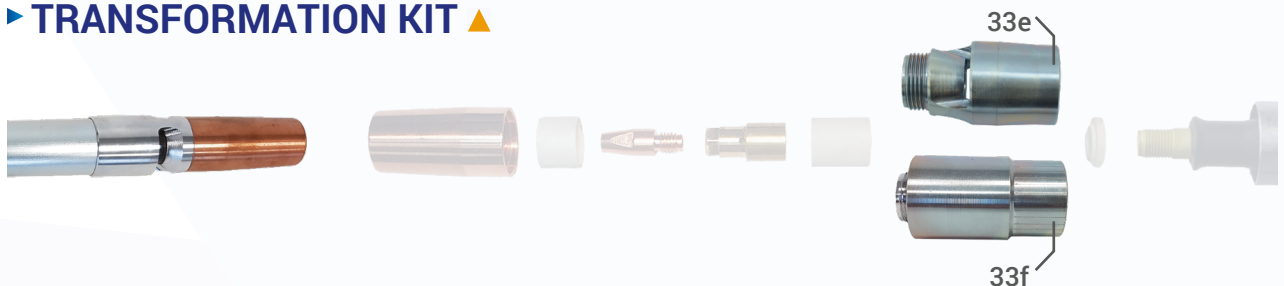
## ► TORCH NECKS AND FUME TUBES ▲

Number	Description	0°	45°
89	> Water cooled automatic torch neck 400	EN2233500	EN2233545A
48	> Fume tube 400	12035D	1203545

## ► LINERS ▲ (more information page 33)

Description	3 m	4 m
Yellow standard liner (round) for steel wire 1.2 mm to 1.6 mm	1023312	1024312
Teflon liner for aluminium wire 1.2 mm to 1.6 mm	ENW005922	ENW005915

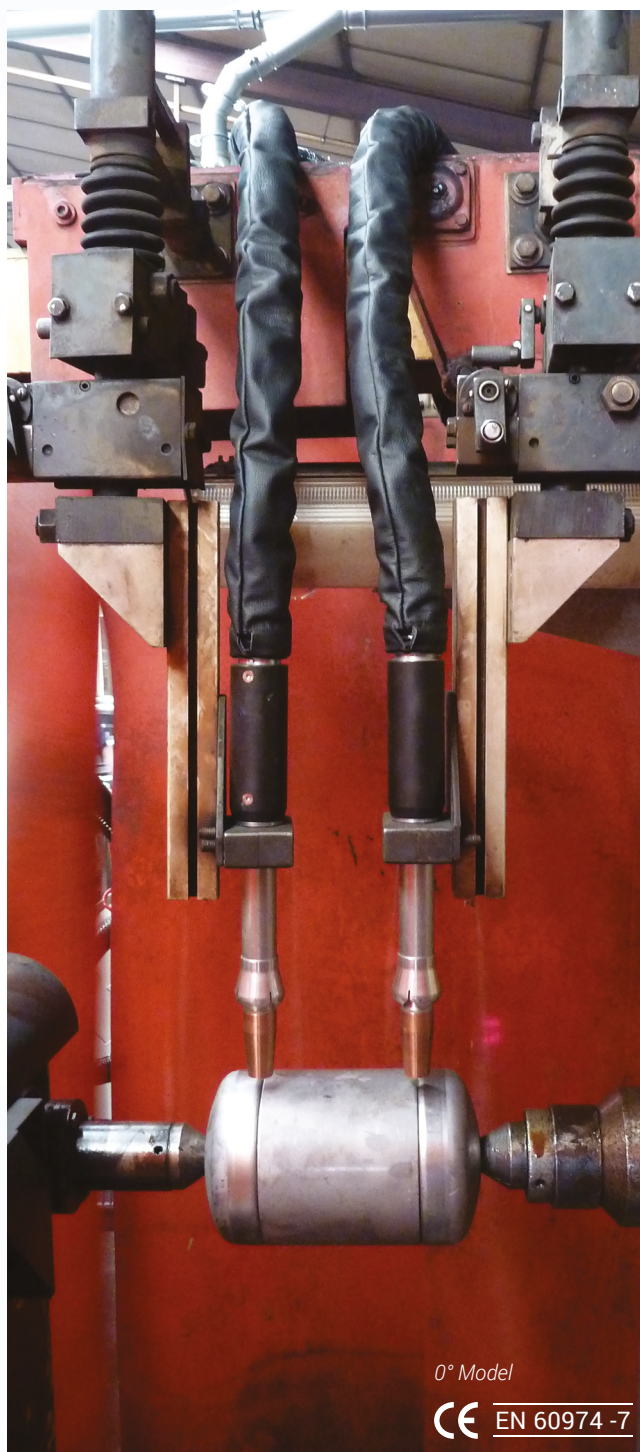
## ► TRANSFORMATION KIT ▲



Number	Description	Product code
33e	> Fume shroud with nozzle holder 350	EN8003E
33f	> Cone fume shroud 350	EN8003C

# Welding fume extraction at source - high vacuum **Extraction torches ERGOFLOW MIG/MAG**

## Automatic Torch 400 ▲



0° Model

 EN 60974 -7

# ATRMP400

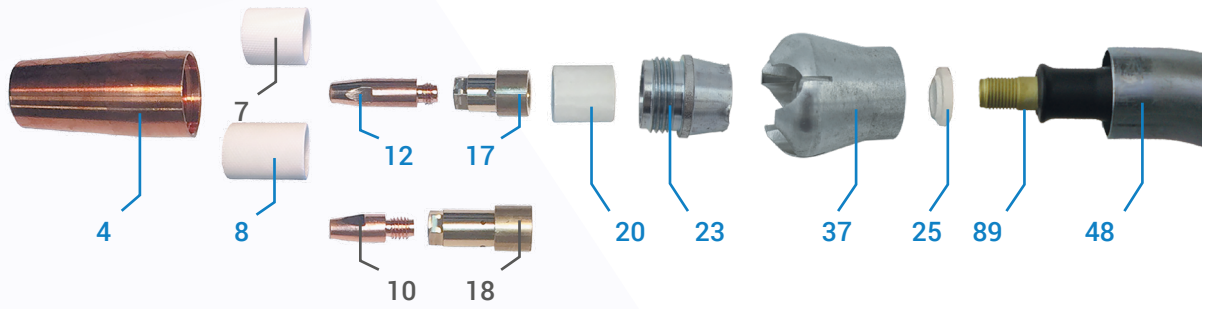


## TECHNICAL DETAILS

Power with CO <sub>2</sub> :	500 A
Duty cycle with CO <sub>2</sub> :	100%
Power with Argon / CO <sub>2</sub> :	440 A
Duty cycle with Argon / CO <sub>2</sub> :	100%
Recommendation welding wire (mm):	1.2 - 1.6
Extraction hose diameter (mm):	40

	0° Model	45° Model
3 m >	ATRMP403050-D	ATRMP403050-45
4 m >	ATRMP404050-D	ATRMP404050-45

Other versions on request.



## ► MAIN CONSUMABLES ▲

Number	Description	Product code
4	Gas nozzle CuCrZr 400 Ø13	EN200013
4	Tellurium gas nozzle 400 Ø16	EN200016T
4	Tellurium gas nozzle 400 Ø19	EN200019T
7	Insulating sleeve Ø13 450	EN320400
8	Insulating sleeve Ø16 and Ø19 450	EN320300

Number	Description	Wire 1.2 mm	Wire 1.4 mm	Wire 1.6 mm
10	Contact tip ECU Ø10 M8 L 30 mm	50 04 12	50 04 14	50 04 16
10	Contact tip CuCrZr Ø10 M8 L 30 mm	50 06 12	50 06 14	50 06 16
12	Contact tip CuCrZr Ø10 5/16" L 37.5 mm	EN500312	-	EN500316

## ► HEAD PIECES ▲

Number	Description	Product code
17	Short gas diffuser 400 for contact tips 5/16"	600200
18	Long gas diffuser 400 for contact tips M8	610300
20	Insulator for diffuser 400	EN710200
23	Gas nozzle holder 400	EN9002
37	Maximum fume shroud 400	EN9003HP
25	Insulator for nozzle holder 400	900300

## ► TORCH NECKS AND FUME TUBES ▲

Number	Description	0°	45°
89	Watercooled torch neck automatic torch 400	EN2234000	EN2234045A
48	Fume tube 400 torch auto	12040D	1204045

## ► LINERS ▲ (more information page 33)

Description	1 m	1.5 m
Yellow standard liner (round) for steel wire 1.2 mm to 1.6 mm	1033316	1034316
Teflon liner for aluminium wire 1.2 mm to 1.6 mm	ENW005922	ENW005939

## ► TRANSFORMATION KIT ▲

Number	Description	Product code
37b	Fume shroud with nozzle holder 400	EN9003E
37c	Cone fume shroud 400	EN9003C



## Welding fume extraction at source - high vacuum Customer specific solutions

### Extraction cut-off button ▲



For welding operations within very confined spaces, an extraction cut-off button can be factory mounted on the extraction torch handle. The button cuts off or slows down the mobile or centralized extraction unit directly (maintained command).

Description	Product code
Torch with one factory mounted button <i>Torch reference : Ex. FRME384050-45 + suffix -10</i>	FRME384050-45-10
Kit torch hood with switch 1 button (factory fitted)	EN20191B
10m extension cable	EN100DDA

### Control units ▲



Several control units can be mounted on the torch hood (for example programme change, current intensity setting, jib crane height adjustments...)

Please contact us for any questions regarding the wiring.

2 BUTTONS	
Description	Product code
Torch with 2 factory mounted buttons <i>Torch reference : Ex. FRME384050-45 + suffix -20</i>	FRME384050-45-20
Kit torch hood with switch 2 buttons (factory fitted)	EN20192B
4 BUTTONS	
Description	Product code
Torch with 4 factory mounted buttons <i>Torch reference : Ex. FRME384050-45 + suffix -40</i>	FRME384050-45-40
Kit torch hood with switch 4 buttons (factory fitted)	EN20194B



### Leather protections ▲







Our air cooled welding torches are equipped with a leather sheath along the entire length of the torch, while our water cooled welding torches are equipped with two leather sheaths. For a welding torch of 3 m length, we recommend at least one leather protection; for torch length from 4 m, we recommend at least two leather protections.

Description	Product code
Torch with 2 factory mounted leather protections <i>Torch reference : Ex. FRME384050-45 + suffix -01</i>	FRME384050-45-01
Torch with 3 factory mounted leather protections <i>Torch reference : Ex. FRME384050-45 + suffix -02</i>	FRME384050-45-02
Torch with 4 factory mounted leather protections <i>Torch reference : Ex. FRME384050-45 + suffix -03</i>	FRME384050-45-03
Leather protection Ø40 (length 1400 mm)	250CU90
Leather protection Ø50 (length 1400 mm)	250CU100

## Additional buttons and leather protections

The button options on the handle as well as the additional leather protections can be combined as follows :

Example : FRME384050-45-??

QUANTITY OF ADDITIONAL LEATHER PROTECTION  QUANTITY OF BUTTONS ON THE HANDLE	FACTORY MOUNTED LEATHER PROTECTION	2 LEATHERS equivalent to a 100% leather protection for a 3M torch	3 LEATHERS equivalent to a 100% leather protection for a 4M torch	4 LEATHERS equivalent to a 100% leather protection for a 5M torch
	No additional code	...01	...02	...03
	...10	...11	...12	...13
	...20	...21	...22	...23
	...40	...41	...42	...43

## Special torches

As a manufacturer, we can offer you specific solutions to meet your needs, for example longer torch necks or with specific angles, torches with special lengths, or accessories with reduced sizes or for specific uses.

## Long gas nozzles ▲



Long gas nozzles for 300, 350 and 380 torches allow welding even in very limited areas. They measure 4 cm more than the regular gas nozzles.

Description	Product code
Transfo Kit gas nozzle & diffuser Ø 12	KBL12
Transfo Kit gas nozzle & diffuser Ø 14	KBL14
Transfo Kit gas nozzle & diffuser Ø 16	KBL16
Tellurium gas nozzle Ø 12 - 25 x 88 mm	EN203512TW40
Tellurium gas nozzle Ø 14 - 25 x 88 mm	EN203514TW40
Tellurium gas nozzle Ø 16 - 25 x 88 mm	EN203516TW40
Gas diffuser M8 Ø 14 x 69 mm	600300W40

## Welding fume extraction at source - high vacuum

# Liners

## Liners ▲

	Description	Length	Product code
	Steel liner (round) for steel wire 0.6 mm to 1.0 mm	3 m	101 33 10
	Steel liner (round) for steel wire 0.6 mm to 1.0 mm	4 m	101 43 10
	Steel liner (round) for steel wire 0.6 mm to 1.0 mm	5 m	101 53 10
external Ø without isolation cover 3,9 mm			
	Red steel liner (round) for steel wire 1.0 mm to 1.2 mm	3 m	102 33 12
	Red steel liner (round) for steel wire 1.0 mm to 1.2 mm	4 m	102 43 12
	Red steel liner (round) for steel wire 1.0 mm to 1.2 mm	5 m	102 53 12
external Ø without isolation cover 4,4 mm			
	Yellow standard liner (round) for steel wire 1.2 mm to 1.6 mm	3 m	103 33 16
	Yellow standard liner (round) for steel wire 1.2 mm to 1.6 mm	4 m	103 43 16
	Yellow standard liner (round) for steel wire 1.2 mm to 1.6 mm	5 m	103 53 16
external Ø without isolation cover 4,9 mm			
	Teflon liner for aluminium wire 1.2 mm to 1.6 mm	3 m	ENW005922
	Teflon liner for aluminium wire 1.2 mm to 1.6 mm	4 m	ENW005939
	Teflon liner for aluminium wire 1.2 mm to 1.6 mm	5 m	ENW005945

## Liner insertion guide ▲



The liner insertion guide facilitates the installation of a new liner. It is inserted at the tip of the liner to help it slide through the torch neck without hindering.

Description	Product code
Liner insertion guide	ENOGG01
Liner insertion guide (packing of 5 pieces)	ENOGG01-5

## Welding fume extraction at source - high vacuum **Torch accessories**

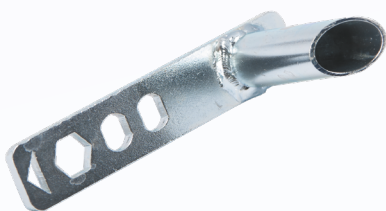
### Connecting hose ▲



Connecting hose for the connection between torch and extraction unit as well as between the extraction unit and external discharge in Ø60 mm. Connection of laminar slit nozzle CHD40150 in Ø40 mm. Made of steel turns and reinforced polyurethane material.

Description	Product code
Connecting hose Ø60 (packing in coils of 20 m)	P600
Connecting hose Ø40 (packing in coils of 15 m)	T400

### Reamer ▲



The reamer allows gas nozzle cleaning without disassembly of the head pieces as well as the replacement and fixation of head pieces with one single tool.

Description	Product code
Reamer for torches 180 / 210 / 250 A	330001
Reamer for torches 300 / 350 / 380 A	330002
Reamer for torches 400 / 450 / 500 A	330003

### Connectors ▲



Our connectors enable hose connections between different diameters.

Description	Product code
Connector diameter Ø50 mm to Ø40 mm	MA45
Connector Ø60 mm for the connection between torch and extraction unit	MA60
Galvanized double thread clamp Ø59 mm to 65 mm	CO023065

### Measuring device for torch ▲



The **ENGMAR** measuring device enables to control the flow and speed of head pieces.

Description	Product code
ENGMAR measuring device for thermal anemometer	GABCTRLT001
Thermal anemometer for flow measurement compatible with IOS and Android	TEST0405I



## Welders' protection as well as high accuracy

Although visible fumes are relatively limited during a TIG welding, very significant quantities of gas are released, mostly ozone, nitrogen oxide, pure argon, as well as particles and nanoparticles (hexavalent chromium, nickel). Extraction at source of these pollutants prevents that welders inhale carcinogen gas and particles.

**ENGMAR** widens its product range with TIGFLOW torches. Available in 4 meters and 8 meters, the TIGFLOW T9, T20 and T17 torches enable steel and stainless steel welding, as well as aluminium welding.

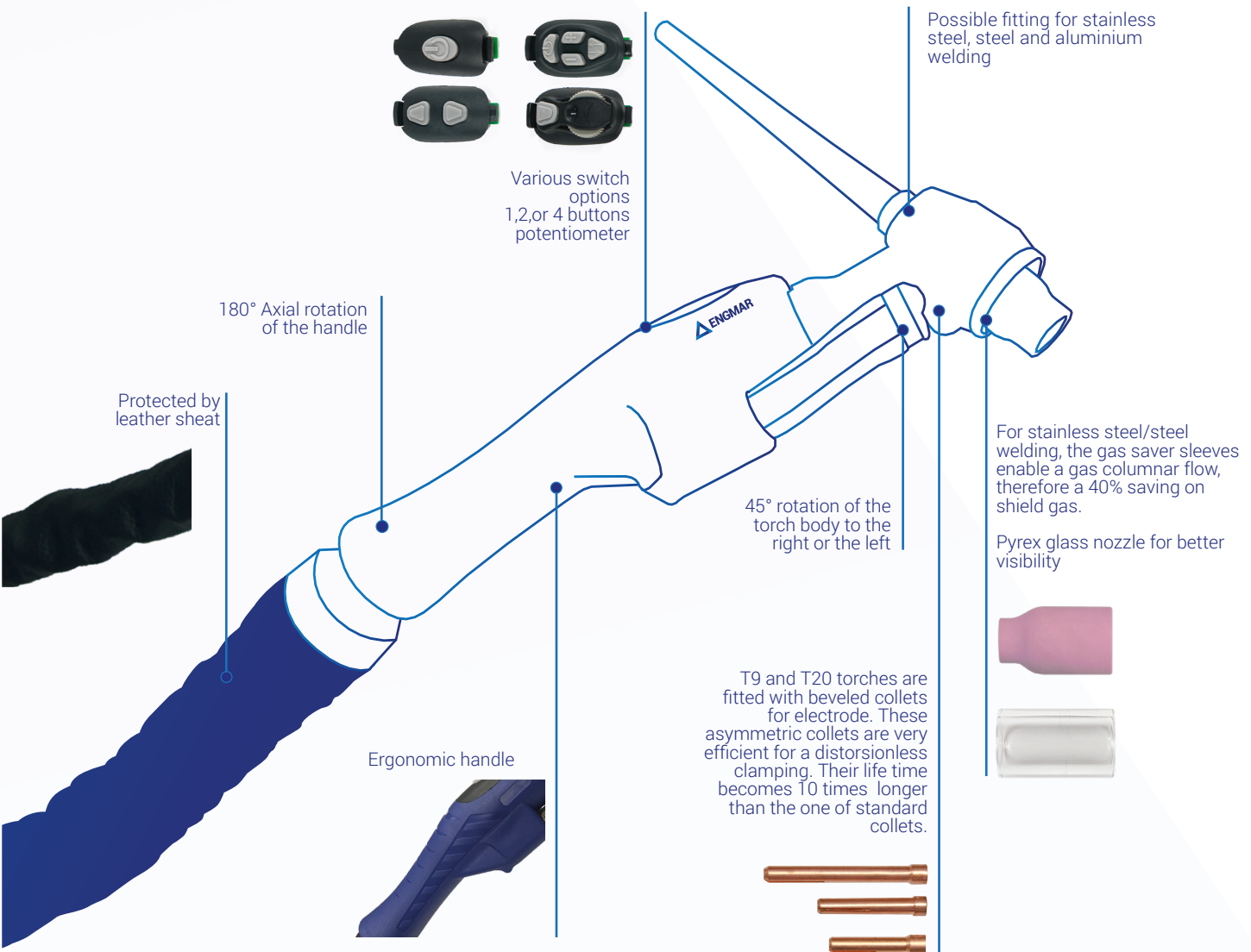
All the torches are delivered fitted with consumables for steel and stainless steel welding. The standard torch is delivered without gas connexion and adaptor. They can be ordered separately. The torches shall then be delivered with a quick connector.

Our torches meet the following standard requirement: EN 60974-of August 7 2013 regarding arc welding / EN 61000-6-2 & EN 61000-6-4 regarding electromagnetic compatibility.

## Extraction torches TIG

Cooling	Torch model	Metal	Power	Duty cycle	Electrodes
 AIR	TIGFLOW T9	Steel/Stainless Steel	125 A DC	60%	1,6 - 3,2 mm
		Aluminium	100 A AC		
 WATER	TIGFLOW T20	Steel/Stainless Steel	250 A DC	60%	1,6 - 3,2 mm
		Aluminium	180 A AC		
 AIR	TIGFLOW T17	Steel/Stainless Steel	150 A DC	60%	1,6 - 3,2 mm
		Aluminium	125 A AC		

*Other versions on demand.*



**GAS SAVER ASSEMBLY**  
save up to

**40%**  
of Argon gas



# Welding fume extraction at source - high vacuum **Extraction torches TIGFLOW TIG**

## TIGFLOW T9 ▲



### TECHNICAL DETAILS

- 90° rotation of the torch body
- Several button switch versions
- Adaptator of any brand
- Fitted with STAINLESS STEEL/STEEL consumables, ready to weld

Natural cooling

125 A DC /100 A AC

Duty cycle 60%

Electrodes Ø1.6 to 3.2 mm

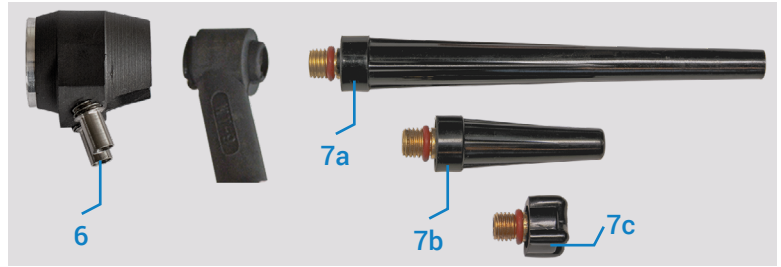
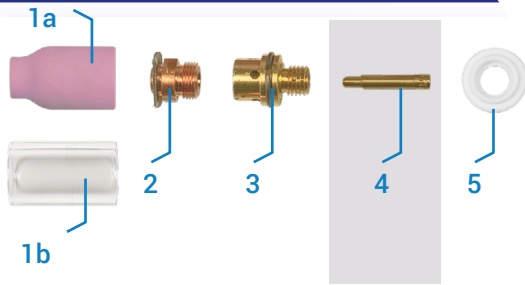
Product code:

4 m > TTG0940

8 m > TTG0980

*Customised connection on request*



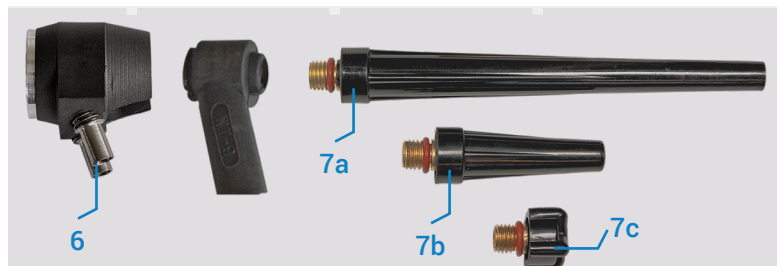
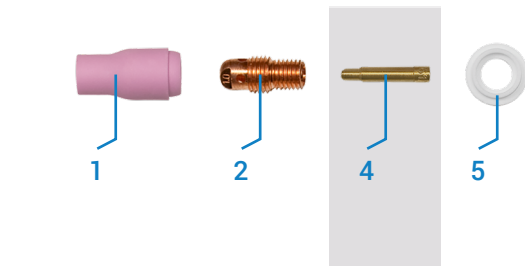


## ► MAIN CONSUMABLES STEEL/STAINLESS STEEL WELDING ▲

Number	Description	Product code
1a	Ceramic gas nozzle N4 Ø 6,3 gaz saver T9/T20	TTS900BC04
1a	Ceramic gas nozzle N5 Ø 8,0 gaz saver T9/T20	TTS900BC05
1a	Ceramic gas nozzle N6 Ø 9,5 gaz saver T9/T20	TTS900BC06
1a	Ceramic gas nozzle N7 Ø 11,0 gaz saver T9/T20	TTS900BC07
1a	Ceramic gas nozzle N8 Ø 12,5 gaz saver T9/T20	TTS900BC08
1b	Pyrex glass nozzle Ø 15 gaz saver LG 32 mm T9/T20	TTS900BP10
3	Adaptator T9/20	TT900AD
5	Standard insulating ring gas saver	TTS900BE

Number	Description	Ø 1.6 T9/T20	Ø 2.4 T9/T20	Ø 3.2 T9/T20
2	Diffuser	TT900D16	TT900D24	TT900D32



## ► MAIN CONSUMABLES ALUMINIUM WELDING ▲

Number	Description	Product code
1	Gas nozzle N4 Ø 6,3 T9/T17/T20	TTA917BC04
1	Gas nozzle N5 Ø 8,0 T9/T17/T20	TTA917BC05
1	Gas nozzle N6 Ø 9,5 T9/T17/T20	TTA917BC06
1	Gas nozzle N7 Ø 11,0 T9/T17/T20	TTA917BC07
1	Gas nozzle N8 Ø 12,5 T9/T17/T20	TTA917BC08
1	Gas nozzle N10 Ø 16 T9/T17/T20	TTA917BC10
5	Ring for T9/T20 nozzle	TTA900BE

Number	Description	Ø 1.6 T9/T20	Ø 2.0 T9/T20	Ø 2.4 T9/T20	Ø 3.2 T9/T20
2	Collet holder	TT0900PP16	TT0900PP20	TT0900PP24	TT0900PP32

## ► COMMON PIECES ▲

Number	Description	Product code
4	Beveled collet for electrode Ø 1,6 T9/T20	TT0900P16
4	Beveled collet for electrode Ø 2,0 T9/T20	TT0900P20
4	Beveled collet for electrode Ø 2,4 T9/T20	TT0900P24
4	Beveled collet for electrode Ø 3,2 T9/T20	TT0900P32
6	Fume shroud without cannula T9	TT09C
7a	Long back cap	TT900BL
7b	Medium back cap	TT900BM
7c	Short back cap	TT900BC



## Welding fume extraction at source - high vacuum **Extraction torches TIGFLOW TIG**

# TIGFLOW T20 ▲



### TECHNICAL DETAILS

- 90° rotation of the torch body
- Several button switch versions
- Adaptator of any brand
- Fitted with STAINLESS STEEL/STEEL consumables, ready to weld

Water cooling

250 A DC /180 A AC

Duty cycle 60%

Electrodes Ø1.6 to 3.2 mm

Product code:

4 m > TTW2040

8 m > TTW2080

*Customised connection on request.*





## ► MAIN CONSUMABLES STEEL/STAINLESS STEEL WELDING ▲

Number	Description	Product code
1a	> Ceramic gas nozzle N4 Ø 6,3 gaz saver T9/T20	TTS900BC04
1a	> Ceramic gas nozzle N5 Ø 8,0 gaz saver T9/T20	TTS900BC05
1a	> Ceramic gas nozzle N6 Ø 9,5 gaz saver T9/T20	TTS900BC06
1a	> Ceramic gas nozzle N7 Ø 11,0 gaz saver T9/T20	TTS900BC07
1a	> Ceramic gas nozzle N8 Ø 12,5 gaz saver T9/T20	TTS900BC08
1b	> Pyrex glass nozzle Ø 15 gaz saver LG 32 mm T9/T20	TTS900BP10
2	> Diffuser Ø 2,4 T9/T20	TT900D24
3	> Adaptor T9/20	TT900AD
5	> Standard insulating ring gas saver	TTS900BE



## ► MAIN CONSUMABLES ALUMINIUM WELDING ▲

Number	Description	Product code
1	> Gas nozzle N4 Ø 6,3 T9/T17/T20	TTA917BC04
1	> Gas nozzle N5 Ø 8,0 T9/T17/T20	TTA917BC05
1	> Gas nozzle N6 Ø 9,5 T9/T17/T20	TTA917BC06
1	> Gas nozzle N7 Ø 11,0 T9/T17/T20	TTA917BC07
1	> Gas nozzle N8 Ø 12,5 T9/T17/T20	TTA917BC08
1	> Gas nozzle N10 Ø 16 T9/T17/T20	TTA917BC10
5	> Ring for T9/T20 nozzle	TTA900BE

Number	Description	Ø 1.6 T9/T20	Ø 2.0 T9/T20	Ø 2.4 T9/T20	Ø 3.2 T9/T20
2	> Collet holder	TT0900PP16	TT0900PP20	TT0900PP24	TT0900PP32

## ► COMMON PIECES ▲

Number	Description	Product code
4	> Beveled collet for electrode Ø 1,6 T9/T20	TT0900P16
4	> Beveled collet for electrode Ø 2,0 T9/T20	TT0900P20
4	> Beveled collet for electrode Ø 2,4 T9/T20	TT0900P24
4	> Beveled collet for electrode Ø 3,2 T9/T20	TT0900P32
6	> Fume shroud T20	TT20C
7a	> Long back cap	TT900BL
7b	> Medium back cap	TT900BM
7c	> Short back cap	TT900BC

## Welding fume extraction at source - high vacuum **Extraction torches TIGFLOW TIG**

# TIGFLOW T17 ▲



### TECHNICAL DETAILS

- 90° rotation of the torch body
- Several button switch versions
- Adaptator of any brand
- Fitted with STAINLESS STEEL/STEEL consumables, ready to weld

Natural cooling

150 A DC /125 A AC

Duty cycle 60%

Electrodes Ø1.6 to 3.2 mm

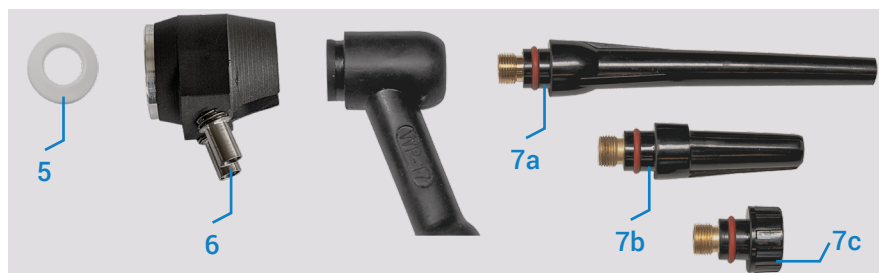
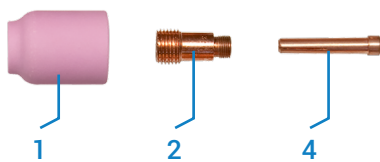
Product code:

4 m > TTG1740


8 m > TTG1780

*Customised connection on request.*





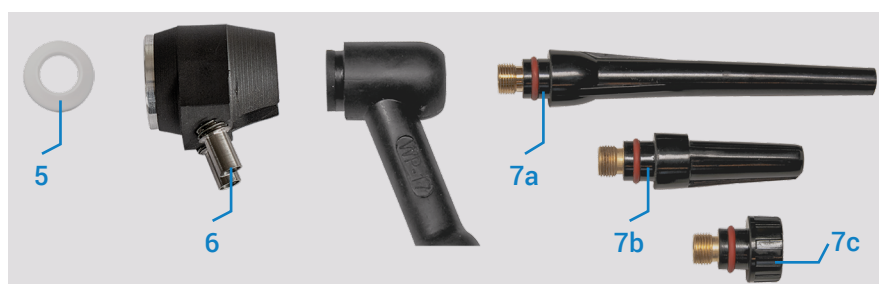
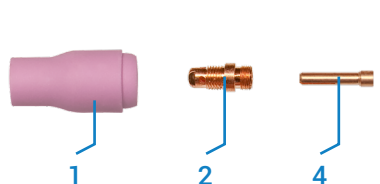


## ► MAIN CONSUMABLES STEEL/STAINLESS STEEL WELDING ▲

Number	Description	Product code
1	> Diffuser nozzle N4 Ø 6,3 T17	TTS017BC04
1	> Diffuser nozzle N5 Ø 8,0 T17	 TTS017BC05
1	> Diffuser nozzle N6 Ø 9,5 T17	TTS017BC06
1	> Diffuser nozzle N7 Ø 11,0 T17	TTS017BC07
1	> Diffuser nozzle N8 Ø 12,5 T17	TTS017BC08



Number	Description	Ø 1.6 T17	Ø 2.0 T17	Ø 2.4 T17	Ø 3.2 T17
2	> Diffuser	TT017D16	TT017D20	 TT017D24	TT017D32
4	> Collet for diffuser	TTS017P16	TTS017P20	 TTS017P24	TTS017P32



## ► MAIN CONSUMABLES ALUMINIUM WELDING ▲

Number	Description	Product code
1	> Gas nozzle N4 Ø 6,3 T9/T17/T20	TTA917BC04
1	> Gas nozzle N5 Ø 8,0 T9/T17/T20	TTA917BC05
1	> Gas nozzle N6 Ø 9,5 T9/T17/T20	TTA917BC06
1	> Gas nozzle N7 Ø 11,0 T9/T17/T20	TTA917BC07
2	> Collet holder Ø 1,0 - 3,2 T17	TT017PP00
4	> Short collet for centered clamping Ø 1,0 T17	TTA017P10
4	> Short collet for centered clamping Ø 1,6 T17	TTA017P16
4	> Short collet for centered clamping Ø 2,0 T17	TTA017P20
4	> Short collet for centered clamping Ø 2,4 T17	TTA017P24
4	> Short collet for centered clamping Ø 3,2 T17	TTA017P32

## ► COMMON PIECES ▲

Number	Description	Product code
5	> Standard insulating ring T17	 TT0017BE
6	> Fume shroud T17	TT17C
7a	> Long back cap	 TT017BL
7b	> Medium back cap	TT017BM
7c	> Short back cap	TT017BC



## Welding fume extraction at source - high vacuum **Connectors and accessories for TIG torches**

### Trigger connections



TTA7PM  
Adaptor 7 pins  
Migatronic\*



TTA9PF  
Adaptor 9 pins  
Fronius<sup>M</sup>



TTA5PZ  
Adaptor 5 pins Messer/  
SAF/Lincoln/EWM/Miller\*



TTA7PF  
Adaptor 7 pins Fro-  
nius/Castolin\*



TTA2PE  
Adaptor 2 pins ESAB\*






TTA7PK  
Adaptor 7 pins Kemppi\*



TTA4PK  
Adaptor 4 pins Kemppi\*

### Power adaptor

You can choose your power adaptor to be directly and rapidly connected on the standard adaptor of ENGMAR TIG welding torches diameter 1/4 F.

	Description	Product code
	Power adaptor 1/4 Fronius*	TTA02
	Power adaptor 1/4 Kemppi*	TTA08
	Power adaptor 3/8 Fronius*	TTA09

## Gas sleeves

You can choose your gas adaptor suited for your welding station. It can be directly and rapidly connected on the standard adaptor of ENGMAR TIG welding torches diameter 4.0 mm.



Description	Product code
Gas sleeve 1/4 SW 17	TTAG01
Gas sleeve M12x100 female SW 14	TTAG02
Gas sleeve 1/8 SW 12, ESAB*	TTAG03
Gas sleeve NW diam 4mm, Migatronic*	TTAG04

## Microswitch



Description	Product code
Standard Microswitch 1 button (fitted on every torch)	SW1B
Microswitch 2 buttons (enabling program selections)	SW2B
Microswitch 4 buttons (enabling current adjustment +/-)	SW4B
Potentiometer Microswitch (enabling current adjustment +/-)	SW1M

## Accessories

Description	Product code
Inductive sensor for automatic extraction (10M long)	DDATIG
Set for TIG torch	KTSILTIG



Number	Description	Product code
1	> Connector torch/unit Ø 50 - Ø 45	TTMA5045
2	> Connector torch/extraction unit Ø 60 mm	MA60
3	> Connecting hose Ø 60 (bundle of 20M)	P600

\*The proposed products are suitable with the original products. They are not the originals and are simply mentioned for your information. The quoted manufacturers keep their brands and there is no link with ENGMAR.

## Jib cranes ▲

Jib cranes allow the installation of an independent wire feeder in a hanging position above the workstation for weight saving reasons. By doing so, the wire feeder can be kept in close proximity to the extraction welding torch. The risks of musculoskeletal disorders as well as those of accidents, like falling over the torch assembly, are therefore highly limited.

### ► TWINAXE

The TWINAXE versions feature two pivot arms and increase the attainable work area of the extraction torch significantly. The height-adjustable versions facilitate the changing of the wire feeder with a maximum weight of 50 kg. Height adjustment is carried out manually for length of 3 m, 4 m and 5 m or by hydraulic actuator for lengths of 6 m.

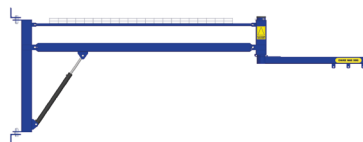


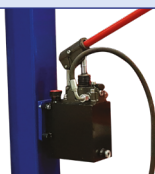

### FIXE TWINAXE



Description	Operating range with welding torch of 4 m length	Product code
Jib crane non-adjustable in height 3 m	6 m	TWINAXE-F-3M
Jib crane non-adjustable in height 4 m	7 m	TWINAXE-F-4M
Jib crane non-adjustable in height 5 m	8 m	TWINAXE-F-5M
Jib crane non-adjustable in height 6 m	9 m	TWINAXE-F-6M
Jib crane non-adjustable in height 6.70 m	9.70 m	TWINAXE-F-6.7M
SUPPORTING POLES FOR FIXED JIB CRANE		
3 meters jib crane with supporting pole 3 to 5 meters		TWINFPOT3
3 meters jib crane with 2 supporting poles 3 to 5 meters		TWINF2POT3
4 meters jib crane with 3 to 5 meters supporting pole		TWINFPOT4

## AJUSTABLE TWINAXE



Description		Operating range with welding torch of 4 m length	Product code
TWINAXE HEIGHT ADJUSTABLE WITH HYDRAULIC CYLINDER AND MANUAL PUMP			
	Height adjustable jib crane 3 m	6 m	TWINAXE-A-3M
	Height adjustable jib crane 4 m	7 m	TWINAXE-A-4M
	Height adjustable jib crane 5 m	8 m	TWINAXE-A-5M
	Height adjustable jib crane 6 m	9 m	TWINAXE-A-6M
	Height adjustable jib crane 6.7 m	9,70 m	TWINAXE-A-6,7M
TWINAXE HEIGHT ADJUSTABLE WITH ELECTRO HYDRAULIC CYLINDER/PUMP 220V			
	Height adjustable jib crane 3 m	6 m	TWINAXE-A-3ME
	Height adjustable jib crane 4 m	7 m	TWINAXE-A-4ME
	Height adjustable jib crane 5 m	8 m	TWINAXE-A-5ME
	Height adjustable jib crane 6 m	9 m	TWINAXE-A-6ME
	Height adjustable jib crane 6.7 m	9,70 m	TWINAXE-A-6,7ME
SPARE PARTS FOR TWINAXE JIB CRANE			
Hydraulic cylinder for 3, 4 and 5 meters jib cranes			TWINVH
Electro hydraulic pump 220V with remote control			TWINVHELEC
SUPPORTING POLES FOR ADJUSTABLE JIB CRANES			
3 meters high pole for 3 to 5 meters jib crane			TWINAPOT3
3 meters high pole for 2 jib cranes of 3 to 5 meters			TWINA2POT3
4 meters high pole for 3 to 5 meters jib crane			TWINAPOT4
3 meters high pole for 6 to 6.7 meters jib crane			TWIN6APOT3
5 meters high pole for 6 tot 6.7 meters jib crane			TWIN6APOT5

## QUANTITY OF BUTTONS ON THE HANDLE



The load balancer is installed on the TWINAXE crane and allows to hang the extraction torch while improving the wire unwinding.

Description	Product code
Complete adaptation kit with load balancer	TWINEC

## ► SIMPLAXE



The SIMPLAXE jib cranes feature a single pivot arm including a rail for the wire feeder with a maximum weight of 50kg, on rail. The rail is equipped with guide rollers and 255 A fixing carriages allowing the fixation of the torch assembly and the extraction hose.

Description	Operating range with welding torch of 4 m length	Product code
Height adjustable jib crane 3 m	6 m	SIMPLAXE-R-3M
Height adjustable jib crane 4 m	7 m	SIMPLAXE-R-4M
Height adjustable jib crane 5 m	8 m	SIMPLAXE-R-5M
3 meters high pole for 3 to 5 meters jib crane		SIMPRPOT3



## Swing arms ▲

Workstation ergonomics is essential for the acceptance of extraction welding torches by the operators. Swing arms allow to put the extraction welding torch in a hanging position which helps to improve handling and reduces the risk of musculoskeletal disorders. The swing arm can be mounted on the welding power source or the extraction unit. The floor space is thus cleared up, preventing work accidents and helping to enhance the lifetime of the welding torch.

### ► SWING ARM FOR WIRE FEEDER STAND EQU21



Swing arm EQU21 on trolley EQU0R

Especially conceived for torches on generator with separate wire feeder, the swing arm can be installed on the welding post, the extraction unit or a trolley.

Either the wire feeder or a compact welding post can be installed on the swing arm.

Description	Product code
Swing arm for independent wire feeder	EQU21
Trolley for EQU21	EQU0R

### ► SWING ARM FOR WIRE FEEDER STAND EQU22



Swing arm EQU22 with trolley and stick

The trolley allows the wire feeder to be moved to different welding areas while maintaining ergonomics and handling of the torch.

Description	Product code
Swing arm for wire feeder stand with trolley and stick.	EQU22

## ► STATIONARY SWING ARM



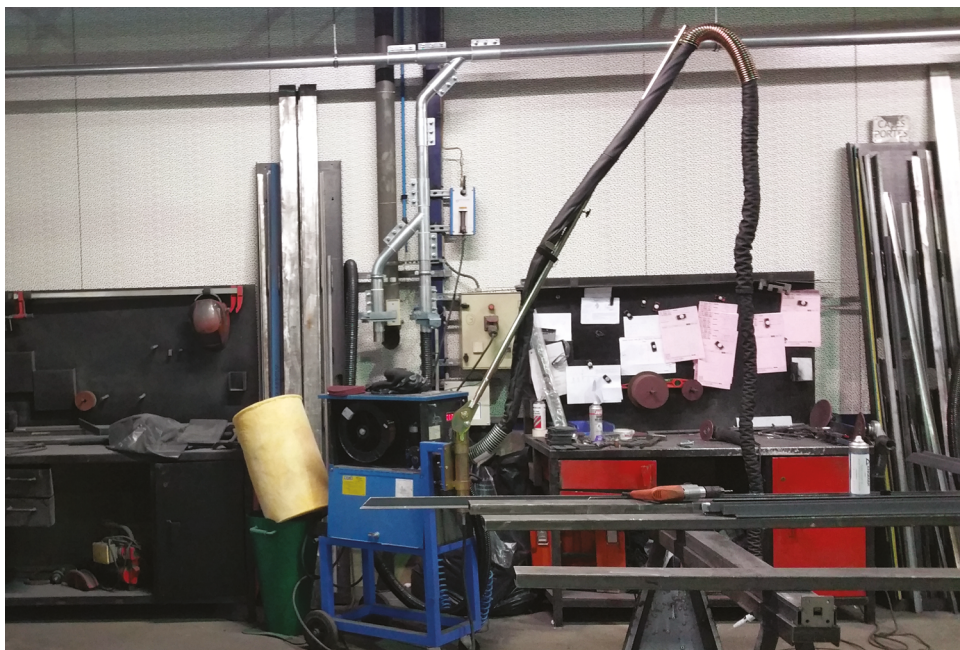
The swing arm with EQU26 stand enables the adaptation of the work station to specific needs.

Description	Product code
Height-adjustable feet from 1000 mm to 1600 mm (screw thread of 100 mm)	EQU26

## ► SWING ARM WITH INTEGRATED WIRE FEEDER

The swing arm EQU23 is designed for the integration on power sources with an integrated wire feeder. The integration requires the installation of a support between the wire feeder and the swing arm.

Description	Product code
Swing arm for integrated wire feeder (without elevation system for the power source)	EQU23





## Welding fume extraction at source - high vacuum **Extraction slit nozzles**

### Extraction slit nozzle CHD

The high vacuum extraction slit nozzles create an opposite air flow to the operators' respiratory tract allowing the capture of welding fumes. They are particularly suited for the extraction of electrode or TIG welding fumes.

#### **ADVANTAGES**

- The slit nozzles may be used instead of an extraction welding torch and thus connected to an extraction unit of **ENGMAR**.
- Easy integration on any surface by means of a connection of 60 mm diameter (slit nozzle width 300 mm) or 40 mm diameter (slit nozzle width 150 mm).
- Efficiency across the entire width, with a distance of 200 mm to the point of emission (may vary according to the welding process).
- Keeps the upper zone of the workstation free and provides better visibility.



#### Description

Slit nozzle width 300 mm connection diameter Ø60 (connection by means of flexible hose Ø60 P600)

#### Product code

CHD60300

Slit nozzle width 150 mm, connection diameter Ø40 (connection of 2 slit nozzles to one extraction unit; connection by means of flexible hose Ø40 T400 + connector MA45)

CHD40150

Connecting hose for torch and/or extraction unit by 20 meters

P600

Connector for torch and/or extraction unit on flexible Ø50 mm to Ø40 mm

MA45

Connector for torch and/or extraction unit on flexible Ø60 mm

MA60

## Welding fume extraction at source - high vacuum **Workstation cleaning**

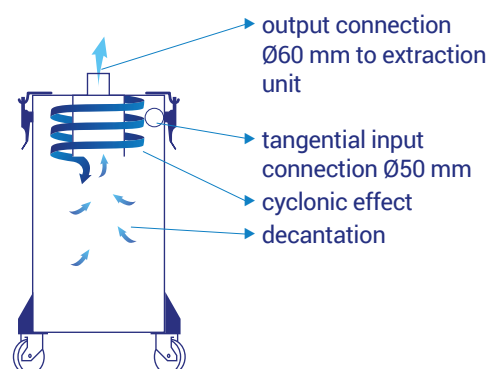
Workstation cleaning is often done by the use of a broom or a blower. By doing so, hazardous particles are stirred up and expose operators at its risks again. The workstation cleaning kits by **ENGMAR** can be connected to central or mobile extraction units and avoid stirring up particles.

### Cyclone cleaner KBCN



The cyclone cleaner KBCN is including an ash tank that can be connected to mobile or central extraction units, the connecting hose as well as a brush kit for floor vacuuming. The ash tank retains the largest particles and prevents damaging the ducting and the extraction unit. The workstation cleaning kit is equipped with wheels to allow good mobility. When using the cyclone cleaner, suitable respiratory protection must be worn.

Description	Product code
Cyclone cleaner + 5 meters of Ø50 hose + sleeve + brush kit for floor vacuuming	KBCN50
Crevice tool	SP40
Brush kit and Ø38 mm pipe	40ENG01



Welding fume extraction at source - high vacuum

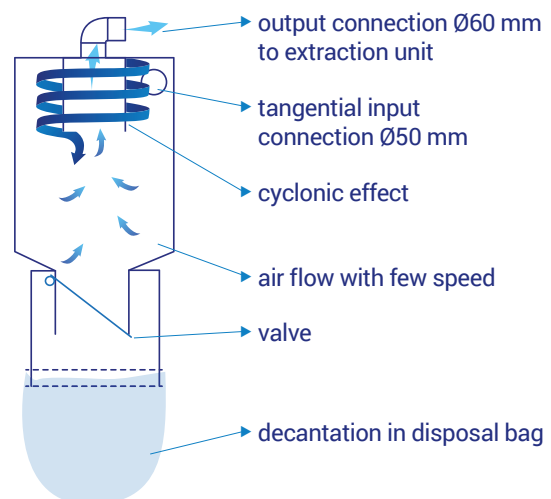
## Workstation cleaning

### Cyclone cleaner KBCNL ▲



The Cyclone cleaner KBCNL is including an ash tank equipped with a disposal bag that can be connected to mobile or central extraction units, the connecting hose as well as a brush kit for floor vacuuming. The ash tank retains the largest particles and prevents damaging the ducting and the extraction unit. The workstation cleaning kit is equipped with wheels to allow good mobility. When using the cyclone cleaner, suitable respiratory protection must be worn.

Description	Product code
Cyclone + 5 m connecting hose Ø50 + sleeve + brush kit for floor vacuuming + 1 disposal bag of 20 m	KBCNL
Disposal bag 4x20 m	TA.0245.0000
Crevice tool	SP40
Brush kit and Ø38 mm pipe	40ENG01





## Cyclone cleaner KBCNF ▲



The KBCNF cyclone is made of a KBCNL on a stationary stand plus a hose reel. The KBCNF cyclone ensures a settling of dusts and other extracted wastes, in order to prevent their spreading into extraction systems or units. These wastes settle then in a drain bag. The extraction hose of the cyclone is stored thanks to the hose reel. The stand is fixed to the ground or the wall.

Description	Product code
Stationary cyclone with bag + brush D50	KBCNF
Crevice tool	SP40
Brush kit and Ø38 mm pipe	40ENG01
Kit for automatic rewinding on high vacuum extraction unit	KMSCEN
Kit for automatic rewinding on extraction unit	KMSGA

## Hose reel ▲

Hose reels allow to store the extraction pipe of the cyclones. The automatic start kit allows to start the extraction at the unwinding.



Description	Product code
Hose reel + 15 m connecting hose Ø50 mm	ENRM05015
Hose reel + 15 m connecting hose Ø40 mm	ENRM03815
Hose reel automatic start kit on high vacuum extraction central	KMSCEN
Hose reel automatic start kit for extraction unit	KMSGA

*\*Suitable pipe for welding, grinding or cutting on demand.*

## Welding fume extraction at source - high vacuum **Extraction units**

The high vacuum extraction units of ENGMAR allow an easy installation in many different layouts. Its space/efficiency ratio is particularly advantageous. The electric box allows the automatic start of the extraction calculated on the arc time with a time delay.

Depending on the welding application and the torch model chosen, the ENGMAR extraction unit can be connected to one or two extraction torches. It is also possible to connect a 300mm wide CHD laminar nozzle, two 150 mm wide CHD laminar nozzle or a cyclone cleaner.

## ATMOFLOW series ▲

The new extraction unit from the ATMOFLOW series offers a complete solution that enables the connection of various extraction and cleaning devices. MIG/MAG or TIG extraction torches, laminar extraction nozzles or even industrial vacuum cleaners can be used. Its extremely powerful extraction filters up to 99.999% of the extracted particles and can be used in combination with a HEPA filter H14 for indoor discharge (see ref. ATMO30RDE).

**Extraction performance:** The ATMOFLOW is particularly suitable for the use in industry thanks to its stable extraction performance through automatic filter cleaning as well as low maintenance requirements. Its sophisticated cleaning concept offers the operator protection not only during welding, but also when cleaning the extraction unit.

**Programming:** the programming and the degree of automation offer the operator an optimum safety through several programs that assist the operator during the emptying, the calibrating of a new extraction torch on the unit or during a function test, provide optimum safety. In addition, the operator is informed about possible events and risks. This extraction unit combines a variety of features that ensure the health of the operator during each welding phase, while guaranteeing productivity.

### ► FILTERING LEVEL

#### Opacimetric filter cartridge ATMO30E unit

- 99.50% filtration on particles of 0.3 µm and more
- Optimal filtration
- External discharge by a discharge in frontage, roof or by an extraction network.
- COPA filter (Class M)

#### Absolute filter HEPA HEPA H14 ATMO30R unit

- 99,995% filtration on particles of 0.3 µm and more
- COPA filter (Class M) / HEPA H14 filter
- May be suitable for air recycling (please check national legislation)
- Allows recycling of the filtered air thanks to an opacimetric filter and an absolute filter DOP H14 (subject to acceptance from authorized organisations and under specific conditions)



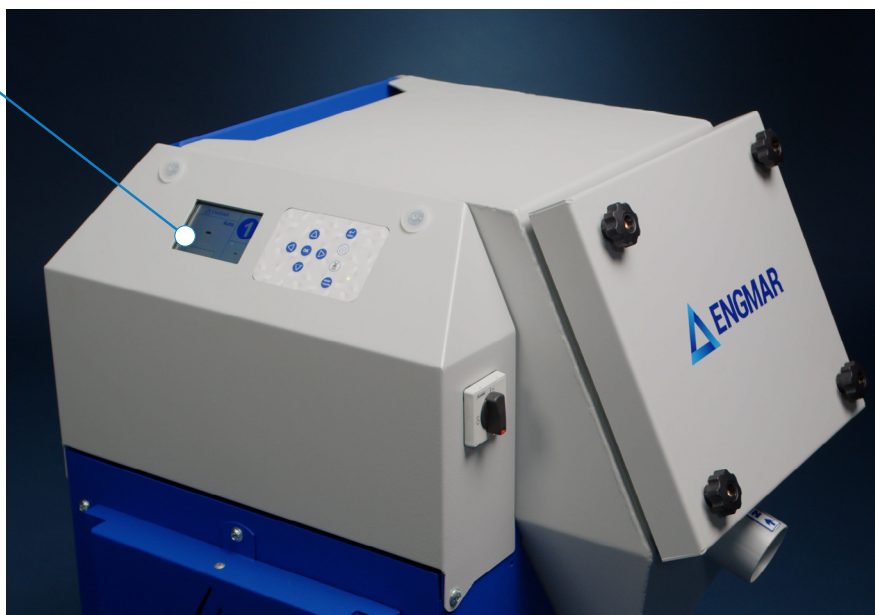
## ► TECHNICAL DATA

- 380V three-phase (220V three-phase optional)
- Turbine 3 kW
- Two levels of filtration possible
- Clogging monitoring of all filters
- Filters up to 99.999% of particles of 0.3 µm and more
- Automatic cleaning

### USER SCREEN

Access to informations:

- Filter clogging in real time
- Alert messages
- Welding time arc on
- Operating time of the turbine
- Number of automatic cleaning cycles
- Number of changed filters



## ► THE EXTRACTION UNIT

Extraction units are delivered with a DDA sensing probe.

Description	Product code
Mobile extraction unit 3 kW, external discharge with opacimetric prefilter	ATM030E
Mobile extraction unit, air recycling with opacimetric prefilter and HEPA H14 filter	ATM030RDE

## ► ACCESSOIRES

Description	Product code
Kit for double connection on one extraction unit (DDA + double jack). For the connection of two torches*, one slit nozzle CHD600300 or two slit nozzles CHD40150	KDEGA
Kit for use of TIGFLOW torches on units	KTSILTIG
Factory fitted inductive sensor for TIG	DDATIGMU

*\*ENGMAR recommends the use of one extraction torch by extraction unit depending on the application and the torch model.*

## Welding fume extraction at source - high vacuum Extraction units

### AA series ▲

The high vacuum extraction units of the AA series are suitable for the utilization of extraction welding torches and may be connected to a chimney for external discharge by the cladding or the roof. They may as well be connected to a low vacuum ductwork for external discharge.

The design of the AA series allows the stacking of several units as well as a flexible integration, par exemple on the wall or on a pole. The filter housing may be installed remotely on the workstation, while the extraction unit is installed in a mechanical room or at heights (distance between the extraction unit and the filter housing: up to 10 m). The extraction unit may as well be installed on a trolley. A swing arm can be fixed on the extraction unit to create a mobile and ergonomic configuration.

#### ► DEGREE OF FILTRATION



##### ► Metallic prefilter Extraction units AATD30

- Retention of the heaviest particles
- For external discharge (directly or by means of a low vacuum ductwork)

##### ► Gravimetric filter Extraction units AAT30F

- Extraction of up to 99.999% of the particles of 1 µm and more
- Primary extraction
- Discharge of filtered air directly or by means of a low vacuum ductwork
- M Class



##### ► Combination of gravimetric and absolute filter DOP H14 Extraction units AATD30 and AATD30DE

- Extraction of 99.995% of the particles from 0.3 µm on
- May be suitable for air recycling (please check national legislation)

##### ► Cartouche filtre opacimétrique DCMF4 Groupe AATIG

- 99.999% filtration on particles of 5 µm and more
- For an external discharge (direct or by collector network)

### AATIG Series ▲ Extraction unit for TIG welding

#### ► DEGREE OF FILTRATION

AATIG extraction unit for welding with TIG torches.

##### Opacimetric filter cartridge

- Filtering media efficiency: 99.999% on 0.5 µm particles (cleaning possible by shaking / not saturable)
- Discharge of cleaned air to the outside
- Equipped with opacimetric filter cartridge DCMF4







Example of an EQU21 on a EQUOR trolley.

## ► EXTRACTION UNITS

The extraction units are delivered with one arc captor DDA.

They allow the connection of MIG/MAG/TIG torches and CHD laminar slit nozzles.

Description	Product code
Mobile extraction unit 3 kW single connection with metallic prefilter	AAT30
Mobile extraction unit 3 kW single connection with gravimetric filter	AAT30F
Mobile extraction unit 3 kW single connection with absolute filter	AATD30
Independant extraction unit 3KW single connection with offset support, electrical box and offset filter box, including a metal prefilter	AAT30DP
Mobile extraction unit for TIG torches 0.9 kW, single connection with polyester filter. Possibility to connect two torches simultaneously.	AATIG
Independant insulated extraction unit 3KW single connection with offset support, electrical box and offset filter box, including a metal prefilter	AAT30IDP

## ► ACCESSORIES

Description	Product code
Kit for double connection on one extraction unit (DDA + double jack). For the connection of two torches*, one slit nozzle CHD600300 or two slit noozles CHD40150	KDEGA
Kit for use of TIGFLOW torches on units	KTSILTIG
Factory fitted inductive sensor for TIG	DDATIGMU
Cap for extraction unit entry Ø60 mm	EE60N

\*ENGMAR recommends the use of one extraction torch by extraction unit depending on the application and the torch model.



## Welding fume extraction at source - high vacuum **Extraction units**

### BB series ▲

The design of the BB series features a framework including a handle and wheels for easy displacement and floor space savings. The extraction unit may be used in its vertical or horizontal position and may be integrated on the gas cylinder trolley. The electrical box allows the automatic start of the extraction according to the arc time temporisation. ENGMAR extraction units allow the connection of one to two torches depending on the chosen welding application and torch model. It is also possible to connect a 300 mm wide CHD slit nozzle, two 150 mm wide CHD slit nozzles or a cyclone cleaner.



#### ► DEGREE OF FILTRATION

##### ► Metallic prefilter: Extraction units **BBM**

- Retention of the heaviest particles
- For external discharge (directly or by means of a low vacuum ductwork)
- Few maintenance at workstation level

##### ► Gravimetric filter: Extraction units **BBT**

- Extraction of up to 90% of the particles of 1 µm and more
- Primary extraction
- Discharge of filtered air directly or by means of a low vacuum ductwork
- M Class

##### ► Combination of gravimetric and absolute filter DOP H14: Extraction units **BBTD**

- Extraction of 99.995% of the particles from 0.3 µm and more
- May be suitable for air recycling (please check national legislation)
- Allows recycling of the filtered air thanks to an opacimetric filter and an absolute filter DOP H14 (subject to acceptance from authorized organisations and under specific conditions)

## ► EXTRACTION UNITS

The extraction units with one torch connection are delivered with one arc captor DDA. They allow the connection of MIG/MAG/TIG torches and CHD laminar slit nozzles.

Description	Product code
Mobile extraction unit 3 kW single connection with metallic prefilter for the connection of one torch, one slit nozzle CHD60300 or two slit nozzles CHD40150	BBM30
Mobile extraction unit 3 kW single connection with gravimetric filter for the connection of one torch, one slit nozzle CHD60300 or two slit nozzles CHD40150	BBT30
Mobile extraction unit 3 kW single connection with gravimetric filter and absolute filter for the connection of one torch, one slit nozzle CHD60300 or two slit nozzles CHD40150	BBTD30

## ► ACCESSOIRES

Description	Product code
Kit for double connection on one extraction unit (DDA + double jack). For the connection of two torches*, one slit nozzle CHD600300 or two slit nozzles CHD40150	KDEGA
Kit for use of TIGFLOW torches on units	KTSILTIG
Factory fitted inductive sensor for TIG	DDATIGMU
Cap for extraction unit entry Ø60 mm	EE60N

\*ENGMAR recommends the use of one extraction torch by extraction unit depending on the application and the torch model.

## BBPASS •



The BBPASS allows to distribute the extracted airflow between the two connections of double connection units. The extraction is activated for one of the two connections while the other one is inactive. It is used for the alternating utilization of an extraction torch and a slit nozzle according to the welding process on one extraction unit. This operation is not compatible with BBTD extraction units.

Description	Product code
Distribution of air flow between the two extraction connections of one extraction unit	BBPASS

## Welding fume extraction at source - high vacuum **Extraction units accessoires**

### Filters

#### ► FILTERS FOR AA SERIES



FMC



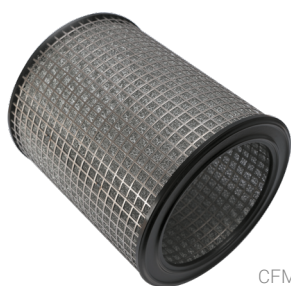
DCMF4



FND14

Description	Product code
Metallic prefilter	FMC
Gravimetric filter	DCMF4
Absolute filter DOP H14	FND14

#### ► FILTERS FOR BB AND ATMOWFLOW SERIES



CFM



COPA



FND14

Description	Product code
Metallic prefilter	CFM
Gravimetric filter	COPA
Absolute filter DOP H14	FND14

## Accessories ▲

Description	Product code
Kit double connection (DDA + double jack) for 2 torches*, or a slit nozzle CHD60300 or 2 slit nozzles CHD40150	KDEGA
Kit for use of TIG on extraction unit	KTSILTIG
Double jack adapter for double connection on extraction unit	EN806
Arc captor	DDA
Inductive sensor (from 5 A onwards) for TIG welding - 10 meters	DDATIG
Factory fitted inductive sensor for TIG welding	DDATIGMU
10 meter extension for DDA	EN100DDA
Connecting hose for the connection between torch and extraction unit and/or between the unit and external discharge in Ø60 mm (packing in coils of 20 m)	P600
Connector for the connection between torch and extraction unit Ø50 mm till Ø40 mm	MA45
Connector Ø60 mm for the connection between torch and extraction unit Ø60 mm	MA60
Galvanized double thread clamp Ø59 mm to Ø65 mm	CO023065
Duct silencer	ENSIL60

\*ENGMAR recommends the use of one extraction torch by extraction unit depending on the application and the torch model.



ENSIL60



EN806

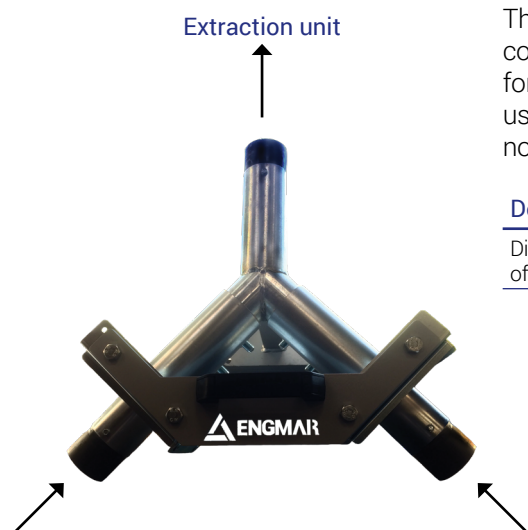


DDA



EN100DDA

## BYPASS ▲



Extraction unit

Means of extraction 1

Means of extraction 2

The BYPASS allows to distribute the extracted airflow between two connections of double connection units. The extraction is activated for one of the two connections while the other one is inactive. It is used for the alternating utilization of an extraction torch and a slit nozzle according to the welding process on one extraction unit.

Description	Product code
Distribution of air flow between the two extraction connections of one extraction unit	BYPASSHD60

## Welding fume extraction at source - high vacuum **Extraction units accessoires**

### Trolleys



AAOR

#### Description

Machine-welded trolley equipped with four wheels allowing the installation of a swing arm EQU21

Small machine-welded trolley equipped with four wheels (without handle)

#### Product code

AAOR

AAORP



AAORP

### Wall mounting kit KDAAT

The wall mounting kit KDAAT allows to install the extraction unit at heights with the filter close to the workstation. The filter housing may be installed remotely on the workstation, while the extraction unit is installed in a mechanical room or at heights (distance between the extraction unit and the filter housing: up to 10 m).

The kit contains the wall mount for the extraction unit, the mount in sheet metal for the filter housing as well as the electrical cable for the remote installation of the electrical box.



#### Description

Complete kit containing the wall mount ENCHAAT, the filter mount ENSCDAAT and the electric cable for the electrical box

Wall mount

Mount in sheet metal for the installation of the filter housing (in combination with filter housing ENCHAAT)

#### Product code

KDAAT

ENCHAAT

ENSCDAAT

### Noise insulation box



The noise insulation box for the AA extraction units provides high acoustic performances and reduces noises by 10 dB at a distance of one meter compared to the extraction unit without noise insulation. The noise insulation box is compatible with the wall mount ENCHAAT for the installation at height of the AA extraction unit.

#### Description

Noise insulation box  
(may be used with the wall mount ENCHAAT)

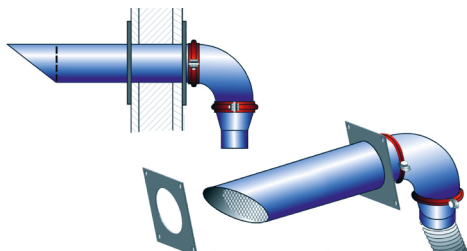
#### Product code

CIAAT



## Welding fume extraction at source - high vacuum **Exhausts and stacks**

### Direct evacuation kits ▲



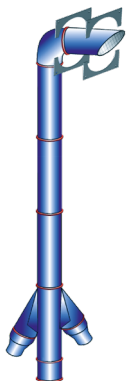
The evacuation kits are designed to route the stand-alone mobile extraction unit discharge towards the outside. They allow discharging the fumes by the cladding or the roof. Support components are not included. Available on demand. Cladding diameter: Ø80 mm, connection to extraction: Ø60 mm with a clamp.

Description	Product code
Cladding penetration kit delivered with finger plates for 1 extraction unit	EV2230
Cladding penetration kit for 2 extraction units	EV2231

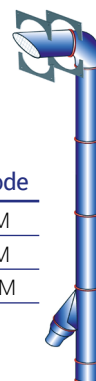
### Exhausts (cladding or roof) ▲

The **ENGMAR** exhaust stacks are designed for the discharge of 1 to 5 mobile extraction units with a possible height from 3 to 12 meters. Cladding exhausts are delivered with finger plates, roof exhausts with a sealing flinch. (See a choice of available options below - contact us for other configurations). Connection diameter of the extraction: Ø60 mm with clamp.

#### ► CLADDING EXHAUSTS

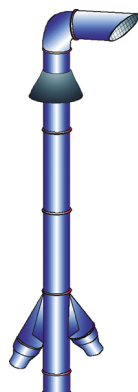


Description	Product code
Exhaust stack for 2 connections - height 3 meters	ENCH2-3M
Exhaust stack for 2 connections - height 5 meters	ENCH2-5M
Exhaust stack for 2 connections - height 10 meters	ENCH2-10M

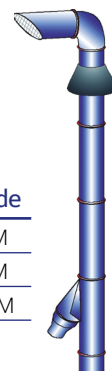


Description	Product code
Exhaust stack for 1 connection - height 3 meters	ENCH1-3M
Exhaust stack for 1 connection - height 5 meters	ENCH1-5M
Exhaust stack for 1 connection - height 10 meters	ENCH1-10M

#### ► ROOF EXHAUSTS



Description	Product code
Exhaust stack for 2 connections - height 3 meters	ENCHT2-3M
Exhaust stack for 2 connections - height 5 meters	ENCHT2-5M
Exhaust stack for 2 connections - height 10 meters	ENCHT2-10M



Description	Product code
Exhaust stack for 1 connection - height 3 meters	ENCHT1-3M
Exhaust stack for 1 connection - height 5 meters	ENCHT1-5M
Exhaust stack for 1 connection - height 10 meters	ENCHT1-10M

## Welding fume extraction at source - high vacuum **High vacuum central extraction units ▲**

High vacuum central extraction units allow to use several extraction welding torches and/or slit nozzles. Driven by a powerful side channel fan at high overall pressure, extracted air volumes as of 100 m<sup>3</sup>/h and velocities of 0.25 m/s at a distance of 20 mm of the contact tip of each connected extraction torch are guaranteed. Every installation is calculated specifically for the number of welding torches to be connected.

The design of the central extraction units allow to adjust electric consumption to the number of torches actually in use. The operating costs are thus matching the economical activity of the production site. When using the auto regulation according to the number of torches, the side channel fans offer the advantage of very low mechanical inertia, thus enhancing the response time in the event of variations.

The central extraction unit only has one maintenance point and a limited floor space occupation. It includes a fan with a noiseproof housing as well as filter cartridges with automatic cleaning. The cleaning is managed by a programmable electronic controller. The extraction system, made of specific smooth pipes for high vacuum, allows transportation of welding fumes from the extraction torch to the central extraction unit.

 We offer you customized maintenance contracts.



*Other versions on request.*

## TECHNICAL FEATURES

**Technology:** side channel turbine size based on the number of the connected extraction torches or other capture devices. (Depending on the network length and calculated losses).

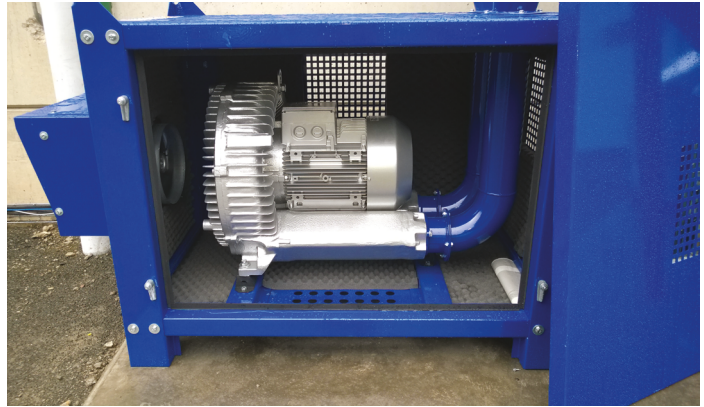
**Possible flow rates:** from 400 m<sup>3</sup>/h to 4000 m<sup>3</sup>/h.

**Power:** from 9 kW to 50 kW.

**Filtration:** pneumatic cleaning cartridge dust collector. Filter surface from 40 to 50 m<sup>3</sup>/h per m<sup>2</sup>. (For the cleaning of 1000 m<sup>3</sup>/h: surface of 25 m<sup>2</sup>) Treated polyester filter element for an efficiency of about 99% on particles from 1 µm.

**Electrical functions:** intelligent flow regulation depending on the number of torches used. (Control unit features a speed regulator with pressure sensor).

**Extraction activation:** electro-pneumatic valves for an activation triggered by arc ignition (time delay is possible after welding).



## ► CENTRAL EXTRACTION UNITS

Description	>	Motor power at 50Hz	Maximum power at maximum frequency	Number of simultaneously used torches*	Number of filter cartridges	Filtering surface
CEN600	>	12.5 kW	14.5 kW	6	4 vertical teflonated polyester filter cartridges	14 m <sup>2</sup>
CEN800	>	12.5 kW	17.5 kW	8	4 vertical teflonated polyester filter cartridges	33 m <sup>2</sup>
CEN1200	>	20 kW	30 kW	12	4 vertical teflonated polyester filter cartridges	48 m <sup>2</sup>
CEN1600	>	40 kW	60 kW	16	4 vertical teflonated polyester filter cartridges	63 m <sup>2</sup>
CEN2400	>	40 kW	60 kW	24	4 vertical teflonated polyester filter cartridges	63 m <sup>2</sup>
CEN3400	>	50 kW	70 kW	32	6 vertical teflonated polyester filter cartridges	93 m <sup>2</sup>

\*Velocities of 0.25 m/s at a distance of 20 mm of the contact tip guaranteed.

## ► ACCESSORIES

Description	Product code
Disposal Bag D500	SAC500
Soundproofing of the air cylinder	ENKAIB
Spark detection system (supply of a normally open and normally closed contact if detection of spark)	ENKADE
Resistant paint for installation in maritime environment	ENKAPPE

## ► CARTRIDGES

Compatibility	Number of cartridges	Product code
CEN600	4 vertical polyester-teflon cartridges	CAR145H1000075P OWR
CEN800	4 vertical polyester-teflon cartridges	CAR325H0700135P OWR
CEN1200	4 vertical polyester-teflon cartridges	CAR325H1000135P OWR
CEN1600	4 vertical polyester-teflon cartridges	
CEN2400	4 vertical polyester-teflon cartridges	CAR325H1000175P OWR
CEN3400	6 vertical polyester-teflon cartridges	

# Welding fume extraction at source - high vacuum

## High vacuum extraction central system

### Control cabinet ▲



The control of our centralised system installations is possible thanks to the control panel equipped with a large touch screen (HMI).

The user can access easily to the settings of the installation and the follow-up of the operating parameters: time programming, filter clogging, power consumption, turbine rotation frequency, operating intake.

#### Schematic view



Non contractual data



Picture of the HMI



AS The access is done by a SIM card, which generates additional costs. These costs can be integrated into the maintenance contract that we offer for all our equipment.

#### PRODUCT ADVANTAGES:

- Intuitive touch screen allowing the adjustment of many parameters
- Possibility to save time slots for automatic operation (clock)
- Display of the installation's variables
- Display of the operating history
- Preventive message for the maintenance of the installation (cartridge, turbine bearing, etc.)
- Remote access to the control cabinet via a secure connection from your PC (software provided by ENGMAR, valid if the cabinet is connected to the internet)
- Remote access to the ENGMAR service team (valid if cabinet is connected to internet)
- Premium quality material (cabinets and components : Schneider Electric, HMIs and drives : KEB)
- Design and assembly MADE IN FRANCE



# Turbine maintenance kit ▲

The **ENGMAR** « plug » & play kit allows any maintenance type while maintaining productivity and work safety. In case of preventive maintenance on high vacuum extraction units, the turbine bearings have to be regularly changed. This type of maintenance lasts several days and implies the stop of the turbine as well as the stop of the welding fumes extraction. This kit can also be used in case of the breakdown of an installation.

The **ENGMAR** turnkey solutions include all the material (joint, valve, cabinet filter...), travel expenses, the installation and connections as well as the turbine maintenance. The kit alone can also be delivered to clients having their own maintenance.

The kit can be rented by the day. Please do not hesitate to contact us for a quotation suiting your needs:

- Plug & Play solution (electrical, pneumatic or fast aeraulic connection)
- 8 welding torches used simultaneously
- Adjustable for any type of high vacuum units
- Dimensions : 1000x600xH1800mm
- Manual start or clock programming
- Inside or outside installation

## Description

Rental of a maintenance kit for an extraction unit

## Product code

LOCKMT800





# Fire protection solutions ▲

## ► CYCLONE FIRE SCREEN



The cyclone fire screen captures all the «heavy» particles before filtration, as well as all molten dust, by creating a sudden speed drop and a cyclone movement. It is made of a metal chassis supporting the cyclone, with a collection bucket on wheel.

Description	Product code
Cyclone fire screen for extraction system > Ø 127	PEC127
Cyclone fire screen for extraction system < Ø 127	PEC203

## ► SPARKLE DETECTION

This option includes a sparkle sensor, sensitive to infrared rays between 780 and 1100 nm, in the dirty air chamber of the filter. The sensor can monitor the stop the installation (system setting to be charged to the client).

# Sound-absorbing cabinets ▲

Noise insulation cabinets suited to the size of your extraction unit can be installed. They allow a reduced noise level during operation and unclogging. Moreover the cabinets protect the unit from bad weather and extend its lifetime.



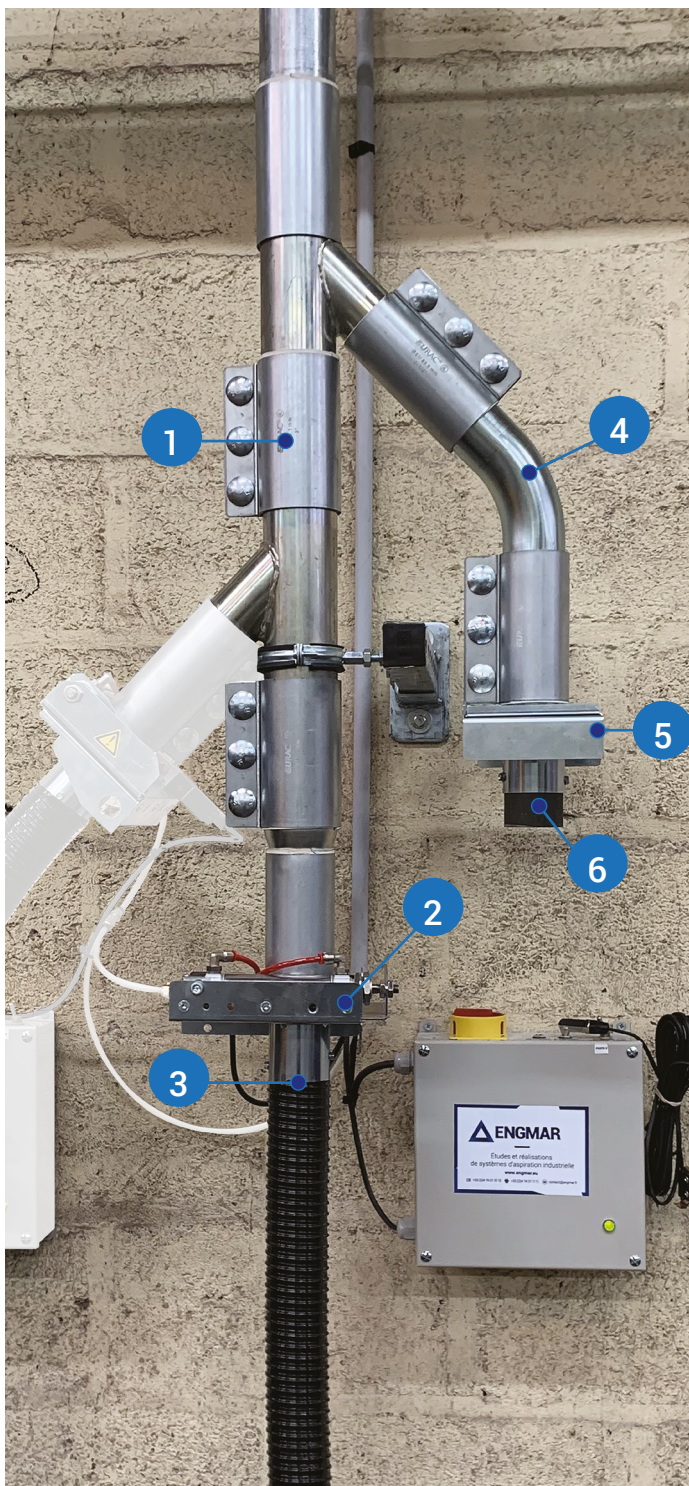
Inside installation.



Outside installation.

Welding fume extraction at source - high vacuum  
**Workstation cleaning**

# Downpipes ▲



1. Downpipe
2. Electro-pneumatic valve with electrical box
3. Torch connection
4. Cyclone downpipe
5. Cyclone connection
6. Cyclone connection

## ► CONNECTION OF EXTRACTION TORCHES

Connection kits for the connection of our extraction welding torches to central extraction units include the electrical box, the electro-pneumatic valve as well as the sensing probe.

Description	Product code
Downpipe Ø63	DESHD063DEV076
Kit Ø63 for the connection of 1 extraction torch incl. electrical box, valve and detection sensor	KRGHDELEC063BT
Kit Ø76 for the connection of 2 extraction torches incl. electrical box, valve and detection sensor	KRGHDELEC076BT

## ► CONNECTION OF CYCLONE CLEANERS

Connection kits for the connection of our workstation cyclone cleaners to central extraction units. They can be connected to single torch connection downpipes in diameter 63 mm or two double torch connection downpipe in diameter 76 mm.

Description	Product code
Downpipe for single torch downpipe Ø63 with jib crane	DESKBCN63
Connection for single torch downpipe Ø63 without jib crane	PIQKBCN63
Downpipe for double torch downpipe Ø76 with jib crane	DESKBCN76
Connection for double torch downpipe Ø76 without jib crane	PIQKBCN76

## Welding fume extraction at source - high vacuum **Welding accessories**

### Gas economizers ▲

The gas economizers selected by **ENGMA** allow reducing the pressure surge during the arc ignition and contribute to capture welding fumes notably for tack welding operations and short arc times.



#### Description

Fully-equipped dual stage gas economizer with a flow meter column and a pressure gauge. Montage bouteille.

Fully-equipped dual stage gas economizer with a flow meter column and a pressure gauge. Montage réseau.

Flow controller for gas flow of 4 to 26 l/min

#### Product code

OPTIMATORB

OPTIMATORR

REG426

### Flow meter ▲



The flow meter allows to check the volume of shielding gas at the gas nozzle. A too high volume of shielding gas blows the welding fumes too far from the extraction area. The volume of shielding gas should be proportional to the diameter of the gas nozzle: 1 l/min for every mm of the gas nozzle diameter. For example: 14 l/min for gas nozzles with a diameter of 14 mm.

#### Description

Flow meter

#### Product code

CDG025



# Anti-spatter spray ▲



Long lasting and dedicated to welding nozzles, the CERAMAR ceramic protection spray is anti spatter and limits gas release. It gives a coating preventing nozzle breakup and overheating, and protects the nozzles from heat shock. Thanks to the ceramic spray, the built up of carbon and clogging are reduced, which reduces maintenance costs. It is suited for automatic and semi-automatic welding.

We recommend to treat the gas nozzles at the end of the day, in order to be operational the next morning.

- Anti spatter
- Gas release reduction
- Coating preventing breakup and overheating of nozzles
- Heat shock prevention
- Carbon buildup reduction
- Less clogging and less maintenance
- For automatic and semi automatic welding



## Description

Anti-spatter spray

## Product code

CERAMAR



## Extraction at workstation level - low vacuum **Our proposals for low vacuum systems**

Depending on the specific needs of the customer, we can offer different low vacuum systems:

### ► **GATHERING SYSTEM FOR HIGH PRESSURE EXTRACTION UNITS:** Slit nozzles or extraction torches



### ► **GATHERING SYSTEM FOR LOW PRESSURE MEANS OF EXTRACTION:** extraction arms, extraction tables, boxes, slit nozzles, etc...



## Extraction at workstation level - low vacuum **Extraction slit nozzles**

# Extraction slit nozzles REVOLFLOW\*

The slit nozzle allows an effective capture by keeping pollutants away from operators' respiratory tracts. It is particularly effective in the case of TIG, MIG or electrode welding fumes. Each slit nozzle can be directly connected to a supply hose with fan on a complete network extraction.



Description	Diameter	Product code
Rotary slit nozzle Ø125 width 400 mm	125	CLR125400
Stationary slit nozzle Ø125 width 400 mm	125	CLF125400
Rotary slit nozzle Ø160 width 600 mm	160	CLR160600
Stationary slit nozzle Ø160 width 600 mm	160	CLF160600
OPTIONS		
Wall support for slit nozzle, height adjustable on 550 mm		SUPREGCLF
Valve for slit nozzle Ø125		CLR125CLAP
Valve for slit nozzle Ø160		CLR160CLAP

*Other available widths on demand.*

## ► TECHNICAL FEATURES

- Aluminium production
- RAL black 9005 finish
- Several nozzle sizes available (see table of available nozzles).

## ► PRODUCT ADVANTAGES

- Extraction on the entire width of the slit nozzle with a distance of up to 500 mm depending on the application and the type of process implemented
- Easy integration on any support or suction arm thanks to its reduced weight <3 kg
- 360° rotation that allows a more comfortable adjustment
- Less handling compared to a conventional hood
- The positioning behind the workstation allows a better visibility
- Foreign object retention grid
- Extraction cut-off by valve
- Optimized acoustic and aerodynamic characteristics

*\* Registered design*



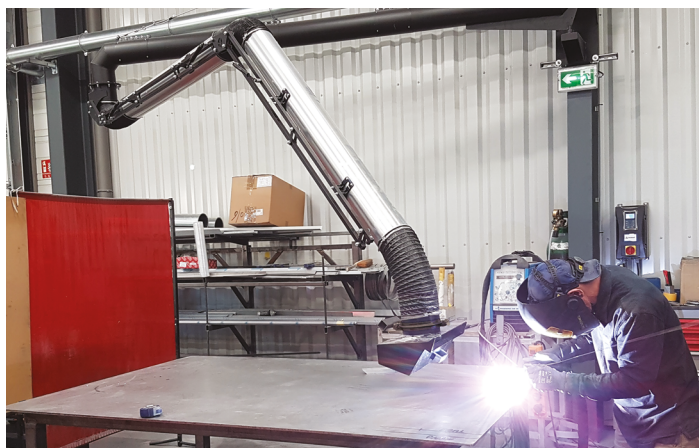
## Extraction at workstation level - low vacuum **Extraction hoods**

# Extraction arms ARMOWELD

ARMOWELD extraction arms are particularly effective and easy to handle. Their external joints give them better longevity and offer a superior extraction flow, compared to arms with internal joints. They allow to connect REVOLFLOW extraction slit nozzles depending on the diameter and the flow. The extraction slit nozzles, connected at the end of the arm, extend the extraction flow sphere of action thus allowing a remote positioning from the fume point emission. This limits the handling by the operator.

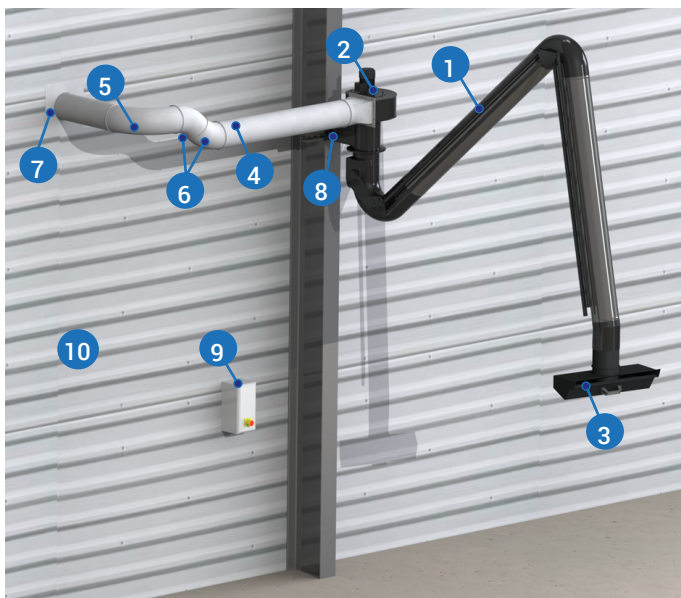
The external supporting structure, produced in one piece, is made of steel and anodised alloy to guarantee a resistance over long periods of time despite a continuous exposure to welding fumes and also to increase the light weight of the combination.

Arms are delivered with a wall mount for the fixation and the connection to the extraction piping. The wall console allows also the installation of the fan. Arms are delivered without hood.



Description	Length	Product code
DIAMETER 125 MM		
2 m Extraction arm	2 m	ENARM1252
3 m Extraction arm	3 m	ENARM1253
4 m Extraction arm	4 m	ENARM1254
3 m Extraction arm + 2 m extension	5 m	ENARM1255
3 m Extraction arm + 3 m extension	6 m	ENARM1256
4 m Extraction arm + 3 m extension	7 m	ENARM1257
4 m Extraction arm + 4 m extension	8 m	ENARM1258
DIAMETER 160 MM		
2 m Extraction arm	2 m	ENARM1602
3 m Extraction arm	3 m	ENARM1603
4 m Extraction arm	4 m	ENARM1604
3 m Extraction arm + 2 m extension	5 m	ENARM1605
3 m Extraction arm + 3 m extension	6 m	ENARM1606
4 m Extraction arm + 3 m extension	7 m	ENARM1607
4 m Extraction arm + 4 m extension	8 m	ENARM1608

## Ducting for extraction arms ▲



The ducting kits are composed of:

1. An extraction arm ARMOWELD Ø125 or 160 - Lg. 2 to 8m
2. A fan according to the diameter of the arm
3. A rotary REVOLFLOW slit nozzle suitable for the diameter of the arm
4. Two straight pipes Lg. 1m
5. One bend 90°
6. Two bends 45°
7. Terminal with mesh protection and finger plates
8. Mount for the installation of the arm and fan
9. A starter set with electrical cable and protective tube
10. Elements for assembly (clamps, screws...)

### REVOLFLOW slit nozzle kit Ø125 mm

This extraction arm + ducting kit includes a slit nozzle CLR125400 of 400 mm wide, Ø125 mm. Its actual flow is 550 m³/h. The electrical power of the fan is 1,1 kW.

Description	Arm length (mm)	Kit code
Kit with arm ENARM1252 of 2m	2 m	KTARM1252
Kit with arm ENARM1253 of 3m	3 m	KTARM1253
Kit with arm ENARM1254 of 4m	4 m	KTARM1254
Kit with arm ENARM1255 of 3m + extension of 2m	5 m	KTARM1255
Kit with arm ENARM1256 of 3m + extension of 3m	6 m	KTARM1256
Kit with arm ENARM1257 of 4m + extension of 3m	7 m	KTARM1257
Kit with arm ENARM1258 of 4m + extension of 4m	8 m	KTARM1258

### REVOLFLOW slit nozzle kit Ø160 mm

This extraction arm + ducting kit includes a slit nozzle CLR160600 of 600 mm wide, Ø160 mm. Its actual flow is 1100 m³/h. The electrical power of the fan is 1,5 kW.

Description	Arm length (mm)	Kit code
Kit with arm ENARM1602 of 2m	2 m	KTARM1602
Kit with arm ENARM1603 of 3m	3 m	KTARM1603
Kit with arm ENARM1604 of 4m	4 m	KTARM1604
Kit with arm ENARM1605 of 3m + extension of 2m	5 m	KTARM1605
Kit with arm ENARM1606 of 3m + extension of 3m	6 m	KTARM1606
Kit with arm ENARM1607 of 4m + extension of 3m	7 m	KTARM1607
Kit with arm ENARM1608 of 4m + extension of 4m	8 m	KTARM1608



## Extraction at workstation level - low vacuum **Extraction hoods**

# Extraction hoods BLH

The BLH extraction hoods by **ENGMAR** allow fume extraction from the back of the workstation and limit the emission area. The extraction hood may be installed on an existing work table or may be supplied with chassis and feet for an independent implantation. The hood is supplied with an upper lid and removable lateral screens. An inspection door allows the elimination of the heaviest dust.



### **ADVANTAGES**

- Efficient extraction of welding fumes: Capture velocity of more than 0.5 m/s.
- Lateral swivel screens allow the loading of pieces larger than the work surface.

### **TECHNICAL DATA**

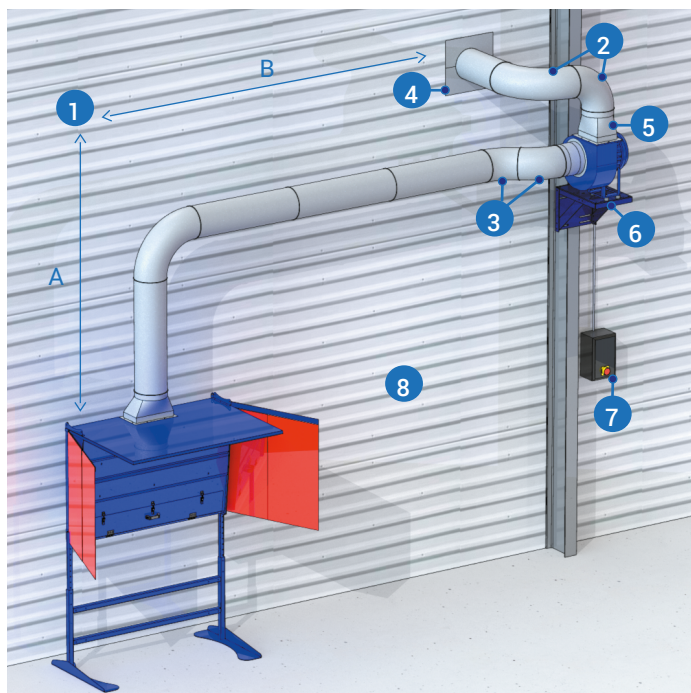
- ▶ Made from steel.
- ▶ Blue RAL 5002, and grey 9006 paint (other versions on request).
- ▶ Drawer for coarse dirt.
- ▶ Optional: mounting including chassis with feet.
- ▶ Optional: Lighting IP65 under the upper lid.
- ▶ Please note that this extraction hood is suitable for steel welding. Please contact us for any other material (ATEX: risk of explosion for certain materials).

### ▶ **STANDARD BOXES**

Actual air flow (m <sup>3</sup> /h)	Effective dimensions in mm, without chassis	Overall dimensions in mm, without chassis	BLH with upper lid and removable lateral screens
1800	1000 x 1000	1040 x 1050 x 1080	BLH1000
2700	1500 x 1000	1040 x 1550 x 1080	BLH1500
3600	2000 x 1000	1040 x 2050 x 1080	BLH2000

# Ducting for extraction hoods ▲

The ductings for extraction hoods are designed for an airflow speed of 0.5 m/s on the open surface considering the depth of the upper lid. Please refer to national legislation.











The ducting kits are composed of:

1. Ducting system of 5 or 10 m (A + B).
2. Two bends of 90° with radius of 1.5 x Ø and one bend with radius of 1 x Ø for installation within confined spaces.
3. Two bends 45°.
4. Terminal with mesh protection and finger plates.
5. A centrifugal fan corresponding to chosen extraction hood BLH.
6. Mount for centrifugal fan for wall or floor mounting.
7. A frequency converter with electrical cable and protective tube.
8. Elements for assembly or hanging.
9. Complete assembly instructions.

Suitable for extraction hood BLH	Ø Ducting system (mm)	Electric power of the centrifugal fan	Overall length of ducting system (m)	Product code ducting
BLH1000	Ø220	0,55 kW	5 m	KTB22005
			10 m	KTB22010
BLH1500	Ø280	1,1 kW	5 m	KTB28005
			10 m	KTB28010
BLH2000	Ø315	2,2 kW	5 m	KTB31505
			10 m	KTB31510

For grinding, we recommend you to filter the collected air before discharge: please consult us.

	Description	BLH1000	BLH1500	BLH2000
	Support frame BLH adjustable in height	SUPBLH1000	SUPBLH1500	SUPBLH2000
	Soundproof box: 5 to 8db gain	BOXRL250	BOXRL280	BOXRL310
	Duct silencer length 0.5 m	SIL05BT220	SIL05BT280	SIL05BT315
	Straight pipe 1m	TD10BT220	TD10BT280	TD10BT315
	Bend 45°	COUDBT45220	COUDBT45280	COUDBT45315
	Bend 90°	COUDBT90220	COUDBT90280	COUDBT90315
	Assembly collar	COLBT220	COLBT280	COLBT315
	Rain collar (roof output)	COLTOI220	COLTOI280	COLTOI315

Provide a clamp for each additional piping element (excluding rain cap).

## Extraction at workstation level - low vacuum **Extraction tables**

# Extraction tables ▲

To ensure the extraction of welding fumes as close as possible to the source of emissions, **ENGIMAR** provides extraction tables that stand alone or are integrated to a ductwork system. They are suitable for grinding, welding or cutting purposes and ensure air velocities of more than 0.5 m/s for welding and grinding and 0.7 m/s for cutting.

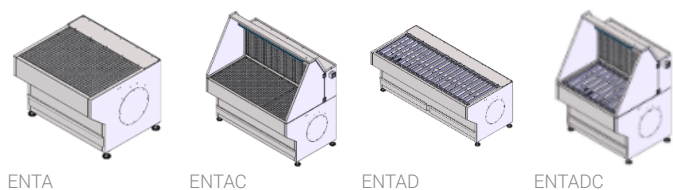


## **ADVANTAGES**

- Suitable for grinding, welding or cutting purposes and ensure air velocities of more than 0.5 m/s for welding and grinding and 0.7 m/s for cutting.
- Adjustable height.

## **TECHNICAL DATA**

- ▶ Made from steel.
- ▶ Blue RAL 5002 and grey 9006 paint (other paints on request).
- ▶ Drawer for coarse dirt.
- ▶ Table includes 4 adjustable legs.
- ▶ Height of the work surface 800 mm (adjustable).
- ▶ Several dimensions of tables available.
- ▶ Welding and grinding: Steel grating.
- ▶ Cutting: sacrificial plates of 60 x 5 mm (without back wall).
- ▶ Removable lateral screens.



## ▶ **AVAILABLE TABLES** (other dimensions available on request)

Series	Effective dimensions (mm)	Overall dimensions (mm)
ENT..1000	1000x700	1090x980
ENT..1500	1500x700	1590x980
ENT..2000	2000x700	2090x980

Table types	Description	Product code 1000 series	Product code 1500 series	Product code 2000 series
ENTA	Extraction table for grinding and welding without back wall and steel grating	ENTA1000	ENTA1500	ENTA2000
ENTAC	Extraction table for grinding and welding with steel grating, back wall, lid, lateral screens and lighting	ENTAC1000	ENTAC1500	ENTAC2000
ENTAD	Extraction table for cutting with sacrificial plates without back wall	ENTAD1000	ENTAD1500	ENTAD2000
ENTADC	Extraction table for cutting with sacrificial plates with back wall, lid, lateral screens and lighting	ENTADC1000	-	-

# Ducting for extraction tables ▲










The ducting kits are composed of:

1. Ducting system of 5 or 10 m (A + B).
2. Two bends of 90° with radius of 1.5 x Ø and one bend with radius of 1 x Ø for installation within confined spaces.
3. Two bends 45°.
4. A muffler length 500 mm.
5. Terminal with mesh protection and finger plates.
6. A centrifugal fan corresponding to chosen extraction table.
7. Mount for centrifugal fan for wall or floor mounting.
8. A frequency converter with electrical cable and protective tube.
9. Elements for assembly or hanging.
10. Complete assembly instructions.

Product code table	Ø Ducting system (mm)	Actual air flow (m³/h)	Overall length of ducting system (mm)	Product code ducting
ENTA1000	Ø180	1290	5 m	KTT18005
			10 m	KTT18010
ENTA1500 ENTAD1000	Ø220	1930	5 m	KTT22005
			10 m	KTT22010
ENTAC1000	Ø250	2120	5 m	KTT25005
			10 m	KTT25010
ENTA2000 ENTAC1500 ENTAD1500 ENTADC1000	Ø280	3050	5 m	KTT28005
			10 m	KTT28010
ENTAD2000	Ø300	3600	5 m	KTT30005
			10 m	KTT30010
ENTAC2000	Ø315	4050	5 m	KTT31505
			10 m	KTT31510

For grinding, we recommend you to filter the collected air before discharge: please consult us.

Description	KTT180	KTT220	KTT250	KTT280	KTT300	KTT315
 Filtration box with a metallic filter	CF180M	CF220M	CF250M	CF280M	CF300M	CF315M
 Soundproof box: 5 to 8db gain	BOXRM280	BOXRL280		BOXRL310		
 Straight pipe 1m	TD10BT180	TD10BT220	TD10BT250	TD10BT280	TD10BT300	TD10BT315
 Bend 45°	COUDBT45180	COUDBT45220	COUDBT45250	COUDBT45280	COUDBT45300	COUDBT45315
 Bend 90°	COUDBT90180	COUDBT90220	COUDBT90250	COUDBT90280	COUDBT90300	COUDBT90315
 Assembly collar	COLBT180	COLBT220	COLBT250	COLBT280	COLBT300	COLBT315
 Rain collar (roof output)	COLTOI180	COLTOI220	COLTOI250	COLTOI280	COLTOI300	COLTOI315

Compter un collier pour chaque élément de tuyauterie supplémentaire (hors collerette pare-pluie).



## **Accessories**

# Central extraction units low vacuum ▲



For a release of cleaned air, central extraction units low vacuum by **ENGMAR** may be installed. They are suitable for metal dusts. The biggest particles are filtered in a decanting pre-chamber, then the air passes through the filters that include a metal dust convenient medium. ATEX certified filters are available as well.

## Extraction fans



The centrifugal extraction fans are well-suited for the extraction of dusty air flows.

## Filtration and soundproofing ▲



Made of galvanized sheet metal, the **filters** are mounted on sliding rails. Optionally, an indicator of clogging allows to monitor the condition of filters that is accessible by a hatch

The **soundproof** box for fan allows a gain from 5 to 8 dB (A) at 1.5 m from the unit at +/- 3 dB (A).

## Piping ▲

Health regulations recommend an extraction speed of minimum 12 m/s in order to prevent the settling of particles, which would damage the installation in the long run.

In order to respect these constraints, while limiting pressure loss, the ENGMAR networks are made of smooth galvanised pipes. Only this type of pipe guarantees a constant speed in every zone and prevents the settling of particles (due to various speeds within the pipe).

## Electrical boxes/Frequency inverters ▲

The connecting hoses chosen by **ENGMAR** are made of polyurethane with inner coppered steel wire. Their design offers a very good compressive strength and abrasion resistance while maintaining a good flexibility. Other connecting hoses are available on request; for example a version for grinding resistant to incandescent particles.

### ► STANDARD INVERTER

Economic model for standard control or regulation.



Description	Product code
3x400V 0,75KW IP66	VAR075TRI
3x400V 11KW IP66	VAR1100TRI
3x400V 15KW IP66	VAR1500TRI
3x400V 1,5KW IP66	VAR150TRI
MONO 2,2KW IP66	VAR220MONO
3x400V 2,2KW IP66	VAR220TRI
3x400V 3KW IP66	VAR300TRI
3x400V 4KW IP66	VAR400TRI
3x400V 5,5KW IP66	VAR550TRI
3x400V 7,5KW IP66	VAR750TRI

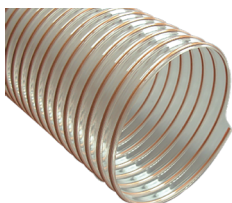
### ► AQUA INVERTER

5-year warranty on model for complex regulation.



Description	Product code
400V 1,5KW IP55	29420111
400V 2,2KW IP55	29420112
400V 4KW IP55	29420114
400V 5,5KW IP55	29420115
400V 7,5KW IP55	29420116
400V 11KW IP55	29420117
400V 15 KW IP55	29420118
400V 18,5 KW IP55	29420119
400V 22 KW IP55	29420120
400V 37 KW IP55	29420122

## Connecting hoses ▲



The connecting hoses chosen by **ENGMAR** are made of polyurethane with inner coppered steel wire. Their design offers a very good compressive strength and abrasion resistance while maintaining a good flexibility. Other connecting hoses are available on request; for example a version for grinding resistant to incandescent particles.

### ► WELDING FLEXIBLES

Description	Product code
Ø180 Welding flexible	FLEXPUL180
Ø200 Welding flexible	FLEXPUL200
Ø220 Welding flexible	FLEXPUL220
Ø250 Welding flexible	FLEXPUL250
Ø280 Welding flexible	FLEXPUL280
Ø300 Welding flexible	FLEXPUL300

### ► GRINDING FLEXIBLES

Description	Product code
Ø40 Grinding flexible	FLEXGRIND40
Ø60 Grinding flexible	FLEXGRIND60
Ø80 Grinding flexible	FLEXGRIND80
Ø90 Grinding flexible	FLEXGRIND90
Ø102 Grinding flexible	FLEXGRIND102
Ø140 Grinding flexible	FLEXGRIND140
Ø160 Grinding flexible	FLEXGRIND160
Ø305 Grinding flexible	FLEXGRIND305

## Capture of welding fumes from robotic welding cells

**ENGMAR** features different solutions for welding fume extraction from robotic cells. Our solutions are broadly recognized by the principal manufacturers with whom **ENGMAR** has been collaborating for several years.

### Fixed hood

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The design of our flat tubular hoods with deflectors allows an easy installation thanks to a limited overall height. In most cases, hoods are supplied with straps corresponding to the standard NF EN ISO 25980 thus allowing a complete partitioning of the cell.

Standard version: depths 1500 or 2000 mm - widths 3000, 3500, 4000 mm.

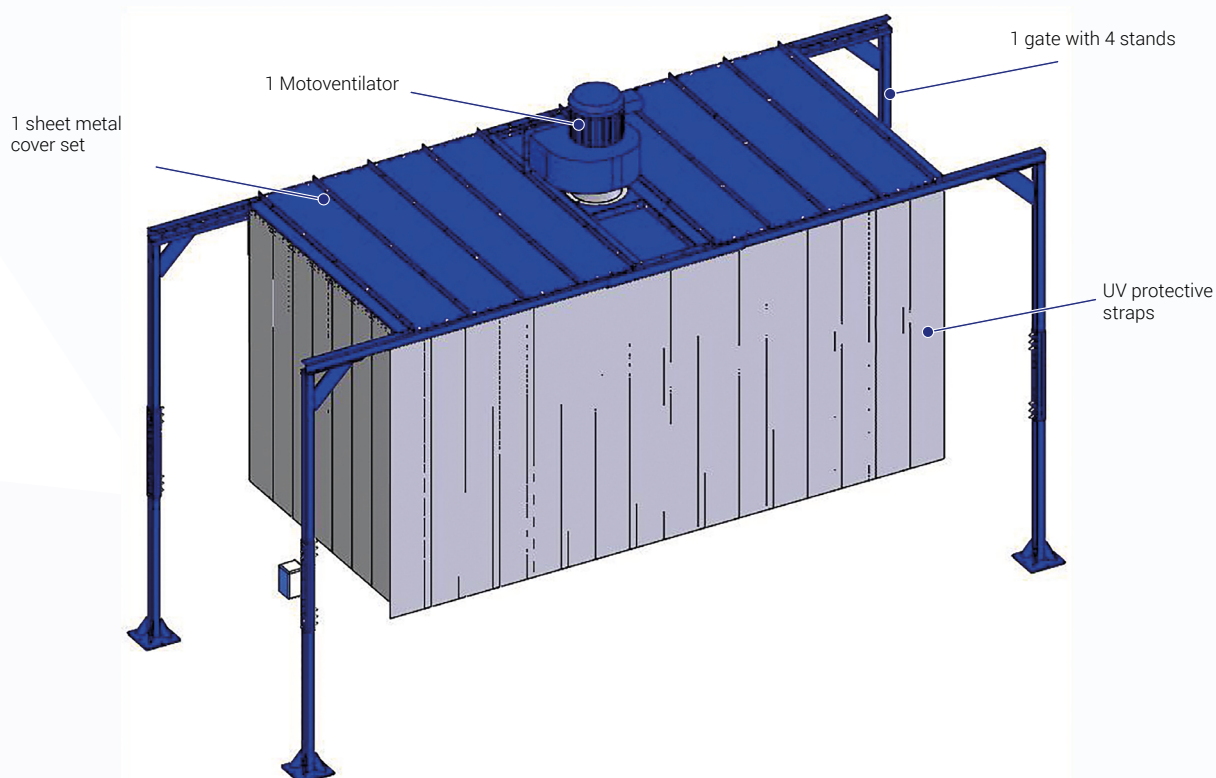
(Other dimensions on demand)





Description	Air flow (m³/h)	Power MV (kW)	Product code
Flat hood 1510x3000x2900mm (H)	2700	1,1	RHP1530
Flat hood 1510x3600x2900mm (H)	2700	1,1	RHP1536
Flat hood 1510x4000x2900mm (H)	2700	1,1	RHP1540
Flat hood 2010x3000x2900mm (H)	4300	2,2	RHP2030
Flat hood 2010x3600x2900mm (H)	4300	2,2	RHP2036
Flat hood 2010x4000x2900mm (H)	4300	2,2	RHP2040

*Example of a kit being installed, without straps.*

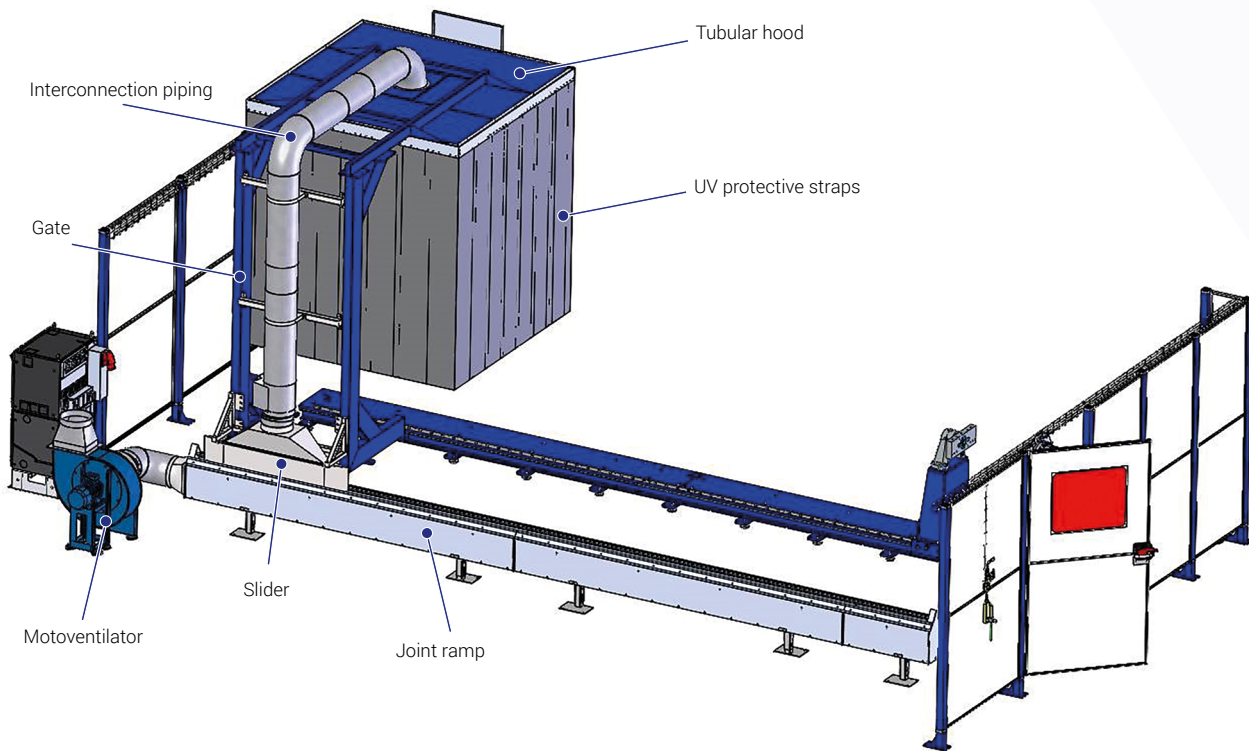




## Capture of welding fumes from robotic welding cells

### Embarked tubular extractor hood

**ENGMAR** offers innovative solutions of fume extraction hoods embarked on the robot. As the extraction hood follows the movements of the robot, the extraction device always stays as close as possible to the point of emission.

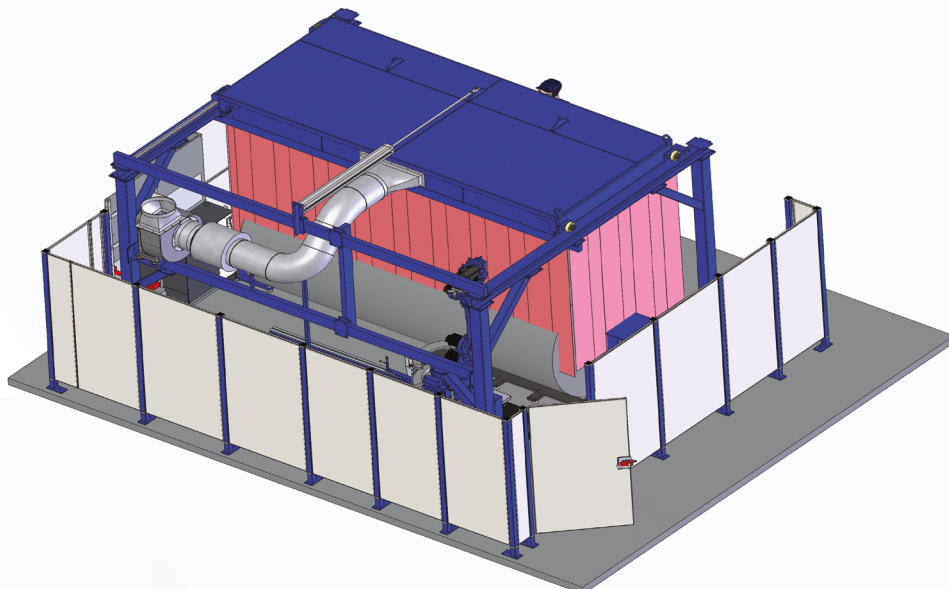




## Retractable hood

ENGMAR designs and installs retractable hoods combined with a partition structure to isolate the welding area.

The partitioning of the emitted pollutants area is one of the recommendation of the Guide of Ventilation published by INRS. It defines welding areas and thus avoids the dilution of pollutants in the surrounding atmosphere. Retractable hoods on these areas make the upper area available in order to move easily voluminous parts.





## Capture of welding fumes from robotic welding cells

**ENGMA** engineering integrates any type of fume extraction means on any type of robot units. **ENGMA** is wellknown for its knowhow and has been working for many years for major welding robot manufacturers.

### Laminar slit nozzles on rail-mounted robots

In some applications, extraction hoods installed on the robots are not convenient. As a solution, laminar slit nozzles may be implanted at the back of the robotic cell in order to let the upper load area free, e.g. when parts are loaded with bridge cranes.





## Laminar slit nozzles with partitioning



**ENGMAR** develops and installs structures for the partitioning of welding zones and integrates laminar slit nozzles for the welding fume extraction.

The partitioning of the emitted pollutants area is one of the recommendation of the Guide of Ventilation published by INRS.

When the application allows it, ENGMAR designs and installs ventilated constructions to define welding areas thus avoid the dilution of pollutants in the surrounding atmosphere.

## Dual-track slit nozzles

In robotic welding cells featuring positioning equipment like rotators or positioners in face-to-face, dual-track slit nozzles allow to capture welding fumes on both sides effectively. This solution allows to keep loading zones free - even in case of bridge crane or jib crane loading.

This compact solution facilitates the installation of gantries for the slit nozzles.





## General ventilation

The engineering office of **ENGMAR** plans ventilation systems for entire manufacturing plants taking into account the position and airflow volumes of extraction devices as well as the needed introduction of fresh air. The studies include:

- Extraction devices.
- General ventilation.
- Introduction of fresh air (preheated if necessary).
- Transport of polluted air.
- Treatment of polluted air.

*Exemple of an installation with a gathering system and a ventilation network based on an existing network:*

General ventilation systems are composed of:

- 1 A fan
- 2 A silencer
- 3 A ventilation network
- 4 Extract grilles

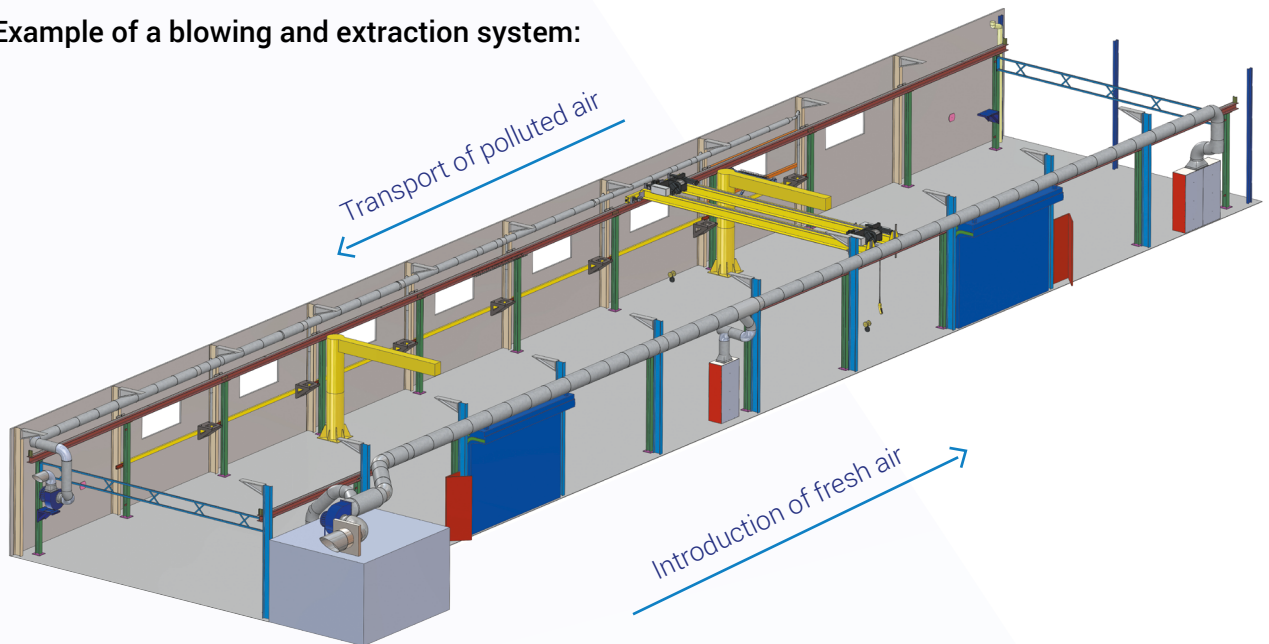
Gathering systems are composed of:

- 5 An extraction network
- 6 A downpipe
- 7 A high pressure extraction unit for extraction welding torch
- 8 A downpipe for slit nozzle





Example of a blowing and extraction system:



## Towers ▲



Present mainly on the roof of buildings and factories, ENGMAR ventilating towers allow air supply or air and fume exhaust. There are two kinds of towers; horizontal flow towers TJH with a sheet metal cap and vertical flow towers TJV in galvanized steel. For tower stump, please give us the angle of the roof.

### ► TOWERS WITH HORIZONTAL FLOW

Description	Propeller Ø	Power	Product code
Tower with horizontal flow	400	0.13 kW TRI	TJHH400.TOU
Tower with horizontal flow	450	0.23 kW TRI	TJHH450.TOU
Tower with horizontal flow	500	0.41 kW TRI	TJHH500.TOU
Tower with horizontal flow	600	0.55 kW TRI	TJHH600.TOU
Tower with horizontal flow	700	0.75 kW TRI	TJHH700.TOU
Tower with horizontal flow	762	1.1 kW TRI	TJHH762.TOU
Tower with horizontal flow	900	2.2 kW TRI	TJHH900.TOU
Tower with horizontal flow	1000	4 kW TRI	TJHH1000.TOU

### ► TOWERS WITH VERTICAL FLOW

Description	Propeller Ø	Power	Product code
Tower with vertical flow	400	0.13 kW TRI	TJVH400.TOU
Tower with vertical flow	450	0.23 kW TRI	TJVH450.TOU
Tower with vertical flow	500	0.41 kW TRI	TJVH500.TOU
Tower with vertical flow	600	0.55 kW TRI	TJVH600.TOU
Tower with vertical flow	700	0.75 kW TRI	TJVH700.TOU
Tower with vertical flow	762	1.1 kW TRI	TJVH762.TOU
Tower with vertical flow	900	2.2 kW TRI	TJVH900.TOU
Tower with vertical flow	1000	4 kW TRI	TJVH1000.TOU

## Axial-flow fans ▲

**ENGMAR** axial-flow fans are designed for wall mounting in industrial buildings. They are used for air extraction or ventilation of premises.



Description	Propeller Ø	Power	Product code
Axial-flow fan	300	0.05 kW TRI	ENMUP300.005
Axial-flow fan	400	0.25 kW TRI	ENMUP400.025
Axial-flow fan	450	0.37 kW TRI	ENMUP450.037
Axial-flow fan	500	0.55 kW TRI	ENMUP500.055
Axial-flow fan	700	1.1 kW TRI	ENMUP700.110

## Gravitational shutters ▲

**ENGMAR** gravitational shutters provide a fresh air supply in a building where an extraction system is not present.



Description	Overall width and height	Width and height	Thickness	Product code
Gravitational shutter 300	347	276	26	10VAP016
Gravitational shutter 350	397	310		10VAP017
Gravitational shutter 400	459	364		10VAP018
Gravitational shutter 500	549	445	31	10VAP020
Gravitational shutter 550	605	522	28	10VAP021

## Outdoor-air supply plenum ▲



Outdoor-air supply plenums allow a mechanized fresh air supply for a building where an extraction system is not present.



## Appendix Installation at a customer's plant



Height adjustable jib cranes TWINAXE



Jib crane with extraction torch



Extraction arm ARMOWELD with laminar flow nozzle REVOLFLOW

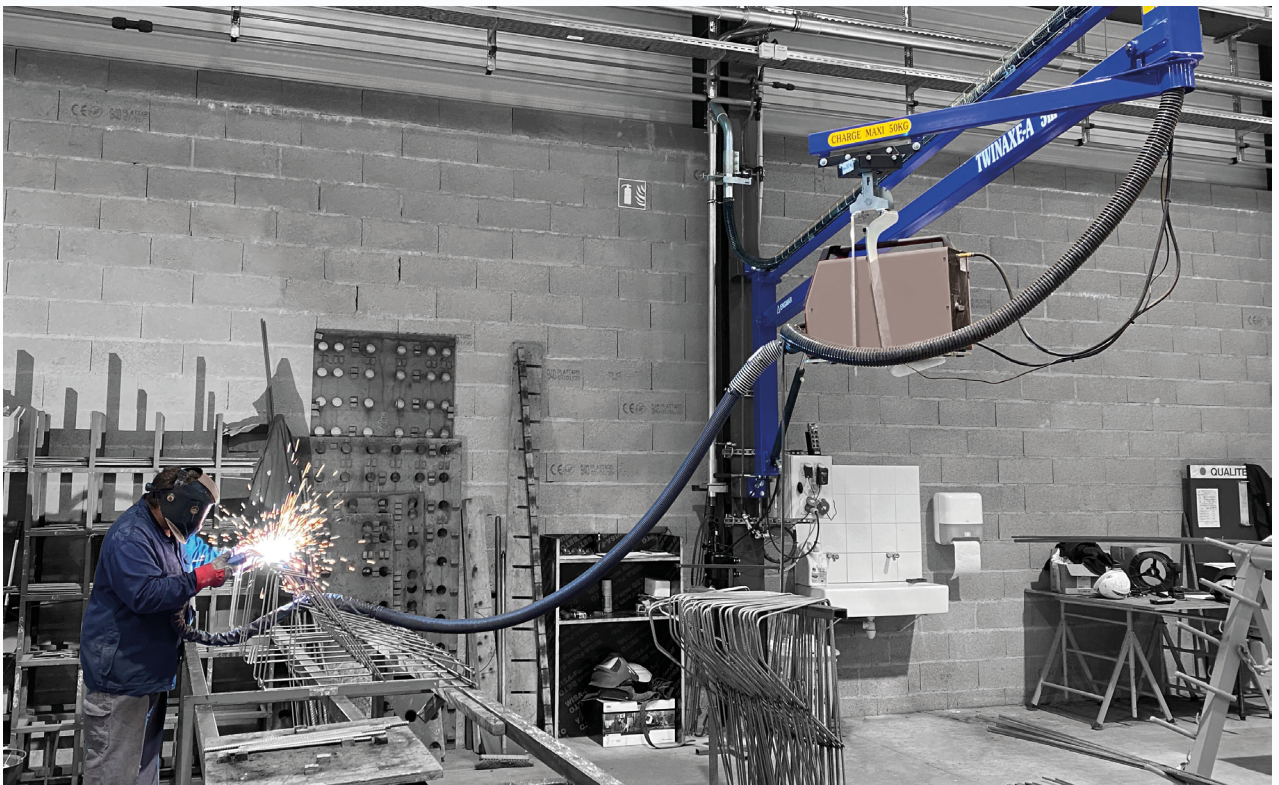




*Central extraction unit*



*Extraction arm ARMOWELD with slit nozzle REVOLFLOW*



*Height adjustable jib cranes TWINAXE with extraction torch*



**ENGMAR**

| Design and development  
of industrial extraction solutions







*Our products are  
available from  
authorised  
partners only.*



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