WST2

Fume extraction torches for MIG/MAG welding

Lighter
More flexibility
More efficient

Our MAIN CONCERN, Your HEALTH!
The extraction of welding fumes at source

The fume extraction at source provides the assurance of a healthy environment for welders in compliance with regulations and labour laws.

In order to meet these requirements, Air Liquide Welding has developed a range of “all-in-one” torches that offer the fundamental characteristics of conventional MIG/MAG welding torches combined with an effective fixed-collector fume extraction system.

The detailed design of the ergonomics, weight, flexibility, manoeuvrability and grip of these torches, will satisfy the most demanding users.

“A completely under control cost”

A fume extraction torch requires a low extraction flow, which is less than all other extraction systems.

As a result, the volume of extracted air is low and generally does not require any additional air compensating and heating installation.

The torches are connected either to independent extraction units or to a centralised high-suction unit.

In both configurations, extraction can be controlled depending on the actual welding needs by welding current automation. Which helps to reduce noise and power consumption.

“A global solution!”

Because the extraction system follows the welder’s arm, it is efficient in all circumstances and can improve the productivity and working conditions of welders.

By using such torches with appropriate welding booms, the torch can be brought to the welder without all the potential user drawbacks.

This improves productivity, safety and the lightness of the torch, while allowing fatigue free working in a healthy environment.

The only extraction arm that is always effective - the welder’s arm!

Welders hold the torch and extraction system in their hand, thus guaranteeing continuous collection efficiency and a clean environment. The OEL* is consequently below the requirements of regulations.

*(Occupational Exposure Limit)
Our new WST2 torches are above all a range of welding torches that efficiently extract welding fumes. Extraction is obtained at a high extraction rate with low load loss due to the advanced air flow design of the torches. The WST2 torches offer same welding accessibility than traditional torches (at same welding characteristics).

Multiple-strand torches with extra flexible power cable. Lightness - Flexibility - Efficiency.

- **Trigger** short or long by addition of an extension blade.
- **Copper nozzle** (screwed).
- **Water cooled torches**: 3W & 4W models have cooled swan neck, 5W have in addition a cooled fume collector nozzle support.
- **Insulated gas diffuser** with ceramic screwed part.
- **Polyurethane extraction pipe**
  - For the air versions: diameter of single section extraction pipe: 40 mm.
  - For the water cooled versions: diameter of dual section extraction pipe: 40/50 mm.
- **Over sheath** in leather on 1.5 meter.
- **Connecting piece** for 50 mm diameter hose.
- **Wear parts change is easy** (without fume collector disassembling).

**Water cooled torches**

*Benefits of multiple-strand water/electricity cable:*

The copper braid that conducts the electrical power is continuously cooled by the water in the torch cooling circuit, making it possible to reduce the cable section for any given power requirement. That reduces the weight and makes the torch harness much more flexible, making the torch easier to handle.
Technical characteristics

| Contact tube   | M6  | M8 x 30 | M8 x 30 | M8 x 30 | M8 x 30 | M8 x 30 |
|               |     |         |         |         |         |         |
| Ø nozzle      | 12 mm | 15 mm | 15 mm | 15 mm | 15 mm | 19 mm |
| Welding intensity @ 100% duty cycle | CO₂ | 250 A | 300 A | 400 A | 300 A | 360 A | 450 A |
|              | Ar / CO₂ | 225 A | 270 A | 320 A | 260 A | 320 A | 410 A |
| Weight (g) according standard | 1180 | 1365 | 1465 | 1570 | 1565 | 1565 |

Captation minimal performances

| For speed 0.25 m/s | Flowrate m³/h | Suction Pa |
|                   | 73  | 94  | 94  | 94  | 90  | 94  |
|                   | 8 400 | 10 600 | 10 600 | 12 500 | 11 000 | 12 500 |
| For speed 0.3 m/s | Flowrate m³/h | Suction Pa |
|                   | 87  | 113 | 113 | 113 | 108 | 113 |
|                   | 13 100 | 16 300 | 16 300 | 16 500 | 16 300 | 16 500 |

New INRS recommendations:

Starting 1st July 2015, INRS (the French Association for Security at Works) make mandatory that the captation speed of the welding fumes is 0.25 m/s minimum (at a referential point located at 20 mm from torch contact tip), strongest requirements in Europe.

In the above table the data for the WST2 torches are shown.

A dedicated design for fume extraction torch. From the idea to the realisation via simulation.

Wear parts according the european standards:

- Contact tip M8 x 30 *
- Contact tip holder M8 *
- Isolated diffuser in ceramic
- Internal liner

* M6 for WST 2R
The DUALFLOW solution

Through the fumes extraction power modulation, the DUALFLOW solution offers to welders an efficient fume extraction combined with optimal weld beads quality.

Air Liquide Welding has created the DUALFLOW torches that allow the welder to decide the change of suction power following its welded joints typology, by a simple pulse on a microswitch on the handle of the torch, and during welding. This will preserve the welder from welding fumes in all circumstances and will increasingly, high quality welds keeping mastery of his work.

Associated with suction torches WST2 with microswitch, the DUALFLOW device will allow to obtain a vacuum flowrate recorded during the entire welding time. With the information given by the microswitch of the torch a reduced flowrate will apply for welding zone in confined area. This flow rate change occurs by simply pressing a microswitch on the handle of the torch (choice of mode 2 times or 4 times as welder habits).

Flowrate modulation controlled by the welder by pressing a simple button.

Types of welded joints

Below typical welded joints that require modulating of the suction flowrate without interrupting the arc, thus without loss of productivity.
To order

**WST2**

<table>
<thead>
<tr>
<th>Type</th>
<th>AIR</th>
<th>WATER</th>
</tr>
</thead>
<tbody>
<tr>
<td>WST2 2R</td>
<td>250 A @ 100%</td>
<td></td>
</tr>
<tr>
<td>3M</td>
<td>W000381887</td>
<td>3M</td>
</tr>
<tr>
<td>4M</td>
<td>W000381888</td>
<td>W000381901</td>
</tr>
<tr>
<td>5M</td>
<td>W000381889</td>
<td>4M</td>
</tr>
<tr>
<td>WST2 3R</td>
<td>300 A @ 100%</td>
<td>5M</td>
</tr>
<tr>
<td>3M</td>
<td>W000381890</td>
<td>W000381902</td>
</tr>
<tr>
<td>4M</td>
<td>W000381891</td>
<td>5M</td>
</tr>
<tr>
<td>5M</td>
<td>W000381897</td>
<td>W000381903</td>
</tr>
<tr>
<td>WST2 4R</td>
<td>400 A @ 100%</td>
<td></td>
</tr>
<tr>
<td>3M</td>
<td>W000381898</td>
<td>3M</td>
</tr>
<tr>
<td>4M</td>
<td>W000381899</td>
<td>W000381904</td>
</tr>
<tr>
<td>5M</td>
<td>W000381900</td>
<td>4M</td>
</tr>
</tbody>
</table>

**WST2 DUALFLOW**

<table>
<thead>
<tr>
<th>Type</th>
<th>AIR</th>
<th>WATER</th>
</tr>
</thead>
<tbody>
<tr>
<td>WST2 2R</td>
<td>250 A @ 100%</td>
<td></td>
</tr>
<tr>
<td>3M</td>
<td>W000384970</td>
<td>3M</td>
</tr>
<tr>
<td>4M</td>
<td>W000384971</td>
<td>W000384977</td>
</tr>
<tr>
<td>5M</td>
<td>W000384972</td>
<td>4M</td>
</tr>
<tr>
<td>WST2 3R</td>
<td>300 A @ 100%</td>
<td>5M</td>
</tr>
<tr>
<td>3M</td>
<td>W000384973</td>
<td>W000384978</td>
</tr>
<tr>
<td>4M</td>
<td>W000384974</td>
<td>5M</td>
</tr>
<tr>
<td>5M</td>
<td>W000384975</td>
<td>W000384980</td>
</tr>
<tr>
<td>WST2 4R</td>
<td>400 A @ 100%</td>
<td></td>
</tr>
<tr>
<td>3M</td>
<td>W000384976</td>
<td>3M</td>
</tr>
<tr>
<td>4M</td>
<td>W000384986</td>
<td>W000384983</td>
</tr>
<tr>
<td>5M</td>
<td>W000384987</td>
<td>4M</td>
</tr>
</tbody>
</table>

**Option**

Transformation kit of a standard torch to a DUALFLOW version: W000385157

**Additional remote control**

- **A** 4 push buttons in cross
- **B** Push button with potmeter 10 kΩ
- **C** 4 push buttons in T
- **D** Up/Down horizontal and push button
- **E** Up/Down vertical or DUALFLOW
- **F** Single push button high
- **G** Single push button centered

**Hose adapter**

1. Hose adapter D45 for WST2 torch
2. Hose adapter D50 for ESSENTIAL turbine
3. Hose adapter D50 for MODULO turbine

**Torch protective tube**

Torch protective tubes in Para-Aramid/Cotton fibre with Nitrile coating. These pipes offer a great resistance to fine projections, to fretting wear, cutting, tearing and temperature, They are sheath type, with total linear seam, without fixing points on the parts or on the tools.
Fume extraction and ergonomy

Collection units* for use with the WST 2 torches

**0.23PA**
- Single-phase unit with filtration for maintenance and light work,
- Two 1000-watt motors,
- 230 m³/h max. with 22,000 Pa maximum suction,
- Controlled by the welding current.

**MODULO 35**
- Three-phase industrial unit for heavy-duty use,
- Outside exhaust or filtration,
- Motor power rating: 3.0 kW,
- 310 m³/h max. with 30,000 Pa maximum suction,
- Controlled by the welding current.

**ESSENTIAL TE 35**
- Three-phase industrial unit,
- For individual outside exhaust or on a centralised collector network,
- Motor power rating: 3.0 kW,
- 310 m³/h max. with 30,000 Pa maximum suction,
- Controlled by the welding current.

**0.3 D**
- Three-phase industrial unit for heavy-duty work with high dust emission, using unclogging cartridge filtration,
- Motor power rating: 3.0 kW,
- 310 m³/h max. with 30,000 Pa maximum suction,
- Controlled by the welding current.

**Centralised high suction units**

A range of units for connecting extraction torches to a centralised system, that can handle torch fumes and also ground dust, fumes from collection nozzles and grinders with integrated extraction.

- Central units only **1**, supplemented by filtration **2** or in compact version **3**.
- Suction flow: 1,000 – 2,000 – 3,000 – 4,500 m³/h with 20,000 or 25,000 Pa constant suction.
- The motor power adapts automatically to the number of torches connected to the system.

*Extraction tube can be adapted on every turbines.

**DUALFLOW retrofit kit for all three phase industrial turbines. Consult us**

**Ergonomic workstations for enhanced productivity**

**INTEGRAL solution**
An all in one solution comprising, the power source, the wire feeder, the torch, boom, the suction/filtration unit assembled one a very easy to manoeuvre trolley.

**Potences**
- **Self-balancing booms** for compact machines or with separate wire feeders.
- **“GIRAFE”** booms with a working radius of 2.5 or 3.5 m.
- **“ERGOMIG 2D”** booms with a working radius of 2.6, 3.6 or 4.6 m.
- **“AEROMIG 3D”** booms with adjustable parallelograms and a working radius of 2.6, 3.6 or 4.6 m.

**High workstation ergonomics**
High workstation ergonomics makes work more comfortable, more productive, safer, and more profitable, and does away with welding torch issues.
Contacts

BELGIUM
AIR LIQUIDE WELDING BELGIUM SA
Z.I. West Oostrooie - Gippenlaan 5 - 3300 TIENEN
Tel.: +32 16 80 48 20 - Fax: +32 16 78 29 22

CHINA
HANGZHOU SAF OERLIKON Weld. Cut.
Shanghai Commercial Branch
Rm 1108 Pine City Hotel
777 Zhao Jia Bang Lu - SHANGHAI 200032
Tel.: +86 21 64 43 89 69 - Fax: +86 21 64 43 58 97

CZECH REPUBLIC
AIR LIQUIDE CZ S.R.O. - Welding and Cutting
Podnikatelská 565 - Areál SVUM - 190 11 PRAHA 9 - Břevnovická
Tel.: +420 274 023 163 - Fax: +420 274 023 253

FRANCE
AIR LIQUIDE WELDING FRANCE
25, boulevard de la Paix - CS 30003 CERGY SAINT-CHRISTOPHE
95895 CERGY-PONTOISE Cedex
Tel.: +33 1 34 21 33 33

GERMANY
AIR LIQUIDE WELDING GERMANY
Industriestrasse 12 - D-67304 EISENBERG/Pfalz
Tel.: +49 6351 4760 - Fax: +49 6351 476 335

HUNGARY
AIR LIQUIDE WELDING HUNGARY
see address in Romania

ITALY
AIR LIQUIDE WELDING ITALIA S.p.A
Loc. Casalmenini, 3 - 37010 RIVOLI-VERONESE (VR)
Tel.: +39 045 82 91 511 - Fax: +39 045 82 91 536

LUXEMBOURG
AIR LIQUIDE WELDING LUXEMBOURG S.A.
5 rue de la Déportation - BP 1385 - L-1415 LUXEMBOURG
Tel.: +352 48 54 56 - Fax: +352 48 54 57

MALAYSIA
SAF-OERLIKON MALAYSIA SDN BHD
No 10, Jalan TPP 5/1, Taman Perindustrian Puchong - 47100 PUCHONG, SELANGOR
Tel.: +60 3 8060 8638 - Fax: +60 3 8061 620

NETHERLANDS
AIR LIQUIDE WELDING NETHERLANDS
Rudolf B. - NL 4824 AJ BREDA
Tel.: +31 76 541 00 80 - Fax: +31 76 541 58 96

POLAND
AIR LIQUIDE WELDING POLSKA - SP. Z.o.o
UL. Porcelanowa 10 - 40-246 KATOWICE
Tel.: +48 32 609 04 50 - Fax: +48 32 609 04 60

PORTUGAL
AIR LIQUIDE SOLDADURA LDA
Rua Dr. António Loureiro Borges, 4-2° Arquiparque
Miraflores - 1490-151 ALGARVE
Tel.: +351 21 64 64 900 - Fax: +351 21 64 64 906

RUSSIA
AIR LIQUIDE WELDING
17 Vorontsovskaya Str. - 109147 MOSCOW
Tel.: +7 495 641 28 96 - Fax: +7 495 641 28 91

SCANDINAVIA
OERLIKON SKANDINAVIEN AB
Krossverkagatan 7 - 216 16 LJUNGHAMN
Tel.: +46 040 670 15 00 - Fax: +46 040 670 15 01

THAILAND
AIR LIQUIDE WELDING CENTRAL EUROPE S.R.O.
37010 RIVOLI-VERONESE (VR)
Tel.: +39 045 82 91 511 - Fax: +39 045 82 91 536

UK
AIR LIQUIDE WELDING MIDDLE EAST FZE
Jebel Ali free zone warehouse No. FZS1AH05
P.O. BOX 18734 - Jebel Ali - DUBAI
Tel.: +971(0)48881606 - Fax: +971(0)48881608

UAE
AIR LIQUIDE WELDING UAE
Low March / London Road - DAVENTRY - Northants NN11 4SD
Tel.: +44 1327 70 55 11 - Fax: +44 1327 70 55 11

UKRAINE
AIR LIQUIDE WELDING UKRAINE, LLC.
Moskovskij Prospect 198 - Office 339 - 61037 KHARKOV
Tel.: +38 057 728 08 52 - Fax: +38 057 728 08 53

Air Liquide Welding International Development
Department France
AIR LIQUIDE WELDING FRANCE
25, boulevard de la Paix - CS 30003 Cergy Saint-Christophe
95895 CERGY-PONTOISE Cedex
Tel.: +33 1 34 21 33 33

Air Liquide Welding International Development
Department Italy
FRO-AIR LIQUIDE WELDING ITALIA S.p.A
Loc. Casalmenini, 3 - 37010 RIVOLI-VERONESE (VR)
Tel.: +39 045 82 91 511 - Fax: +39 045 82 91 536

World leader in gases, technologies and services for Industry and Health, Air Liquide is present in 80 countries with more than 50,000 employees and serves more than 2 million customers and patients. Oxygen, nitrogen and hydrogen have been at the core of the company’s activities since its creation in 1902. Air Liquide’s ambition is to be the leader in its industry, delivering long-term performance and acting responsibly.