

Metal Fabrication



Gas, services and innovation
for metal welding and cutting

The SIAD Group

SIAD is an international chemical group active for almost 100 years
in the businesses of **Industrial Gases, Engineering,**
Healthcare, LPG and Natural Gas;
in addition it offers energy solutions and environmental management services.



Values



Research,
Technology
and Innovation



Experience,
Tradition
and Strength



Geographical
and sector
diversification



Commitment to
Quality, Safety
and the Environment



Reliability,
Professionalism
and Expertise



Attention to
social and
cultural issues

Sections

Industrial Gases

SIAD - Production and distribution of industrial, specialty, food-grade and medical gases. Present in 16 European countries with manufacturing and trading companies.

Tecnoservizi Ambientali - Services aimed at achieving environmental sustainability through the recovery and/or the disposal of hazardous and non-hazardous industrial waste.

Healthcare

Medigas Italia / Magaldi Life - Innovative services and products for home and hospital care.

Engineering

SIAD Macchine Impianti - Design, production and installation of cryogenic air separation units, cryogenic nitrogen generators, natural gas liquefaction systems, reciprocating compressors for process gas and air, plus instrument air packages.

ESA - Systems, solutions and components for industrial combustion.

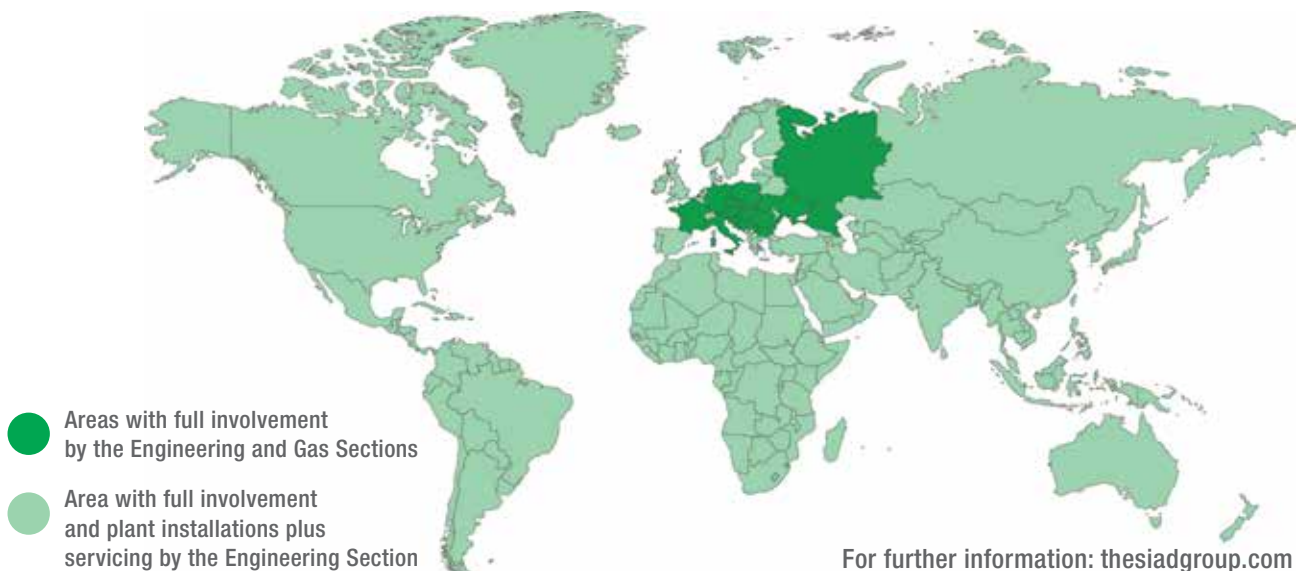
Tecno Project Industriale - Systems for the production, recovery, extraction, liquefaction and vaporization of carbon dioxide and biogas upgrading systems. Biogas upgrading plants to purify biogas produced by anaerobic digestion from organic waste, processing scrap and by-products, effluent from livestock farming, crop wastes and other biomass and plants for polishing and liquefaction of biomethane, bioLNG and bioCO₂.

Pentatec - Gas analysis systems.

LPG and Natural Gas

Istrabenz plini Group - Production and sale of liquefied petroleum gas and methane gas for civil and industrial use.

Worldwide presence



For further information: thesiadgroup.com

Metal Fabrication SIAD

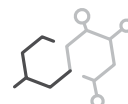
Since 1927, small and large metalworking companies have put their trust in the people, solutions and gases of SIAD.

To strengthen this partnership, SIAD has continued to innovate, maintaining the high quality standards that set it apart.



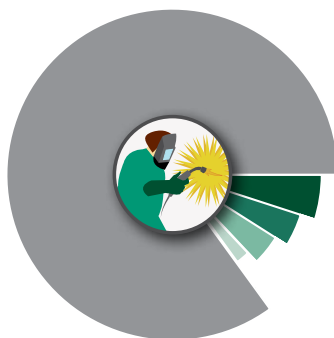
The Metal Fabrication SIAD line of products and services developed to achieve excellent results combining the right value for each customer

Gases and mixtures



Welding PRO line

Is the SIAD line dedicated to welding processes. The pure gases and mixtures offered are the result of the research and experience gained in welding operations alongside our Customers.



COST ALLOCATION IN THE WELDING PROCESS

- 85% Labour
- 5% Wire
- 4% Gas**
- 4% Equipment
- 2% Electricity

Laser PRO line

Is the SIAD line of pure gases and mixtures dedicated to laser applications, developed in collaboration with the main operators in the sector. The Laser PRO line gases are pushed to purity values such as to ensure maximum yield in the process.

SOLIDITY

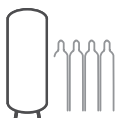
Almost 100 years of history, always in profit and constant growth in revenues.

SIAD Group has deep roots in Italy and a strong aptitude for internationalization: operating in 16 countries in the gas sector and a further 38 countries through Service Centers for Engineering, all our growth is achieved in accordance with the Group's core values.

INNOVATION

Unique projects, tailor-made responses: we have always been committed to developing solutions that meet the needs of customers, who are privileged partners in a shared journey of progressive improvement. Synergies, inspiration and technological cross-fertilization with other sectors of industry lie at the root SIAD Group's innovation processes.

Supply methods



Any type of supply, everywhere

SIAD, thanks to branches and the network of agencies, reaches all the area in Italy and abroad where it is present. Supplies can be made both in cryogenic tanks and cylinders, small or large, always with the same guarantee and consistent quality and service.

Flexigas

High-flexibility service ensuring the continuous availability of high-purity liquid gas with always constant dispensing characteristics that can be adapted to the individual requirements of various production processes.

Platinum

Each gas-related issue managed directly by SIAD. Distribution, handling and control of systems are no longer an issue.

Gas distribution systems

SIAD designs and manufactures “turnkey” gas distribution systems with high quality and safety criteria, complying with the highest standards.

The services we offer



SIAD Online

Customer Area enables Customers to place orders, download invoices, transport documents, gas technical data sheets and certifications. All just a click away, wherever and whenever you want.

Process certification

SIAD processes are certified according to the main UNI EN ISO directives. Its integrated management system meets the most stringent quality, reliability and traceability requirements.

Construction sites services

Yards is the flagship of the SIAD service. Just one contact person for deliveries to the point of use with ad hoc management for every need.

Training courses for the safe use of gases

Experience in using our products allows SIAD to hold training courses for the safe management of gases together with the most accredited training centres.

AUTHENTICITY

For SIAD Group personnel, fostering good relations with the customer is central to their work. We invest in skills and reliability, and aim to forge direct relationships with all our stakeholders. By listening and communicating, we always serve our customers and respond to their needs quickly and effectively, and the use of online channels makes the approach even more transparent and innovative.

DIFFERENCE

Tradition, spirit of innovation and high-quality research are interwoven with a strong bond to our territory and a range of solidarity initiatives. Wide-ranging sources of stimulus and the high level of diversification of our projects, activities and interests play a key role in making SIAD the only Group of its kind on the Italian and world stage.



PRO

OUR DIFFERENCE,
YOUR ADVANTAGE.

ARGO
PRO

HYDRA
PRO

HELI
PRO

SIAD Welding PRO
is always top quality
but with something extra:
your satisfaction

ARGOPRO, HYDRAPRO, HELIPRO, make up
the Welding PRO product line, which brings
SIAD expertise into the METALFAB world,
adding to the products' quality, a universe
of services designed specifically for welders.

Capillarity, training, productivity and innovation
come together in one:
PRO, the added value for all your welding
requirements.

#SIADisEverywhere



WATCH THE VIDEO

SIAD

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ARGO PRO

OUR DIFFERENCE,
YOUR ADVANTAGE.



SIAD Welding PRO
is always top quality
but with something extra:
your satisfaction

ARGOPRO is the most popular and widely
used line of welding gas mixtures, with the
advantage of a widespread distribution and gas
management related services.

SIAD ARGOPRO is everywhere, near you.

#SIADisEverywhere


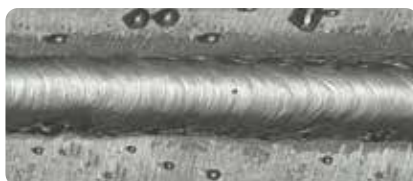












WATCH THE VIDEO



Carbon steels

Carbon-iron alloys are those that do not contain additional alloying elements (chromium, nickel, etc.), except as impurities. They are the most common type of steel, as they are easy to work with and weld. Especially, at high temperatures they are subject to corrosion, as well as the loss of mechanical strength. At very low temperatures they become brittle.

		STANDARD MIXTURE	HIGH-PERFORMANCE MIXTURE																													
MIG-MAG	< 4 mm	ARGOPRO C-8   <table border="1"> <tr><td>●●</td><td>Bead shape</td><td>●●●●</td></tr> <tr><td>●●</td><td>Joint appearance</td><td>●●●●</td></tr> <tr><td>●</td><td>Spatter reduction</td><td>●●●●</td></tr> <tr><td>●●</td><td>Penetration and edges fusion</td><td>●●●●</td></tr> </table> <p> <i>Excellent results in spray-arc and pulse arc modes</i></p>	●●	Bead shape	●●●●	●●	Joint appearance	●●●●	●	Spatter reduction	●●●●	●●	Penetration and edges fusion	●●●●	ARGOPRO PB   <table border="1"> <tr><td>●●●●</td><td>Bead shape</td><td>●●●●</td></tr> <tr><td>●●●●</td><td>Joint appearance</td><td>●●●●</td></tr> <tr><td>●●●●</td><td>Spatter reduction</td><td>●●●●</td></tr> <tr><td>●●●●</td><td>Penetration and edges fusion</td><td>●●●●</td></tr> </table>	●●●●	Bead shape	●●●●	●●●●	Joint appearance	●●●●	●●●●	Spatter reduction	●●●●	●●●●	Penetration and edges fusion	●●●●					
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> 4 mm	ARGOPRO C-18   <table border="1"> <tr><td>●●</td><td>Bead shape</td><td>●●●●</td></tr> <tr><td>●●</td><td>Joint appearance</td><td>●●●●</td></tr> <tr><td>●</td><td>Spatter and fumes reduction</td><td>●●●●</td></tr> <tr><td>●●</td><td>Penetration and edges fusion</td><td>●●●●</td></tr> <tr><td>●●</td><td>Productivity</td><td>●●●●</td></tr> </table> <p> <i>Perfect for robotic applications</i></p>	●●	Bead shape	●●●●	●●	Joint appearance	●●●●	●	Spatter and fumes reduction	●●●●	●●	Penetration and edges fusion	●●●●	●●	Productivity	●●●●	HELIPRO HP1   <table border="1"> <tr><td>●●●●</td><td>Bead shape</td><td>●●●●</td></tr> <tr><td>●●●●</td><td>Joint appearance</td><td>●●●●</td></tr> <tr><td>●●●●</td><td>Spatter and fumes reduction</td><td>●●●●</td></tr> <tr><td>●●●●</td><td>Penetration and edges fusion</td><td>●●●●</td></tr> <tr><td>●●●●</td><td>Productivity</td><td>●●●●</td></tr> </table>	●●●●	Bead shape	●●●●	●●●●	Joint appearance	●●●●	●●●●	Spatter and fumes reduction	●●●●	●●●●	Penetration and edges fusion	●●●●	●●●●	Productivity	●●●●
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●●●●	Productivity	●●●●																														
Cored Wire (*)	<i>For all thicknesses</i>	ARGOPRO C-18 / CO₂(*) 	HELIPRO HP1(*) 																													

(*) Recommended where the use of a specific mixture is not expressly indicated by the wire manufacturer

It is possible to learn more on the characteristics of each mixture in the tables on pages 21/22/23

PERFECT FOR:

 Manual welding

 Automated welding



SIAD provides their know-how to run tests in order to find the most suitable mixture for the process you are using
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		STANDARD MIXTURE	HIGH-PERFORMANCE MIXTURE
TIG	For all thicknesses	ARGOPRO industrial grade 	HELIPRO HE-5  
Plasma		ARGOPRO 5.0 (Plasma Gas)  ARGOPRO 5.0 industrial grade (Shielding Gas) 	- HELIPRO HE-30 
Laser	For all thicknesses	ARGOPRO 5.0 	HELIPRO mixtures 
Back shielding	For all thicknesses	Nitrogen industrial grade 	ARGOPRO 5.0 



CASE STUDY THE PLUS OF TERNARY MIXTURES

Ternary welding mixtures are those where 3 gases are combined to create an optimal mixture, exploiting the advantages of each. Thanks to the applied study of these mixtures, we created products that can achieve significantly higher performance and quality compared with standard mixtures.

One company that drew advantages from our high-performance mixtures is the metalwork shop Abbati S.r.l. in Reggio Emilia, which, for **the MIG welding process of carbon steels, used ARGOPRO C-8.**

After testing the ternary mixture **ARGOPRO PB**, the customer tangibly experienced the advantages of the combination of Argon, Carbon Dioxide and Oxygen, achieving **better shape and penetration of the weld bead, in addition to a significant spatter reduction.**



FOCUS MIG-MAG PROCESS

For this type of process, we support our Customers offering solutions with traditional and innovative gases and mixtures, in addition to specialised consultancy to achieve:

- High quality welding
- Increased productivity
- Greater safety
- Cost cutting.

FIND OUT MORE



HYDRA PRO

OUR DIFFERENCE,
YOUR ADVANTAGE.



SIAD Welding PRO
is always top quality
but with something extra:
your satisfaction

HYDRAPRO is the welding gas mixtures
product line with Hydrogen, created specifically
to improve your welding process and featuring
constant improvement for unmatched welding.
**SIAD HYDRAPRO: all our detailed research
at the service of your work.**

#SIADisEverywhere




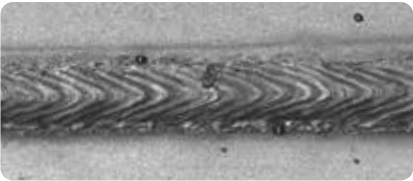
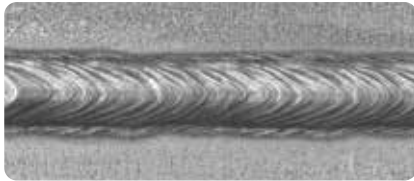




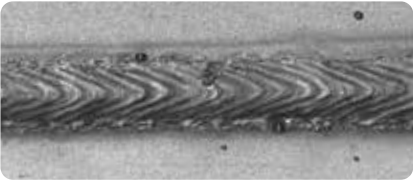







WATCH THE VIDEO



Austenitic stainless steels (AISI 300)

Austenitic stainless alloys are predominantly made with chromium (16-20%), nickel (7-18%) and molybdenum (3-6%). High percentages of these elements confer greater resistance to corrosion from acids, both at high temperatures and in high concentration, as well as stress corrosion cracking.

MIG-MAG	< 3 mm	STANDARD MIXTURE	ARGOPRO C-2 	HIGH-PERFORMANCE MIXTURE	HYDRAPRO PB.SS.  													
																		
	<table border="0"> <tr> <td style="text-align: center;">● ●</td> <td style="text-align: center;">Bead shape</td> <td style="text-align: center;">● ● ●</td> </tr> <tr> <td style="text-align: center;">●</td> <td style="text-align: center;">Joint appearance</td> <td style="text-align: center;">● ● ● ●</td> </tr> <tr> <td style="text-align: center;">●</td> <td style="text-align: center;">Spatter reduction</td> <td style="text-align: center;">● ● ● ●</td> </tr> <tr> <td style="text-align: center;">● ●</td> <td style="text-align: center;">Penetration and edges fusion</td> <td style="text-align: center;">● ● ●</td> </tr> </table>	● ●	Bead shape	● ● ●	●	Joint appearance	● ● ● ●	●	Spatter reduction	● ● ● ●	● ●	Penetration and edges fusion	● ● ●	<p style="text-align: center;"> <i>Perfect deoxidation of the weld bead</i></p>				
	● ●	Bead shape	● ● ●															
●	Joint appearance	● ● ● ●																
●	Spatter reduction	● ● ● ●																
● ●	Penetration and edges fusion	● ● ●																
> 3 mm	ARGOPRO C-2 	HELIPRO HP1  																
		<table border="0"> <tr> <td style="text-align: center;">● ●</td> <td style="text-align: center;">Bead shape</td> <td style="text-align: center;">● ● ● ●</td> </tr> <tr> <td style="text-align: center;">● ●</td> <td style="text-align: center;">Joint appearance</td> <td style="text-align: center;">● ● ● ●</td> </tr> <tr> <td style="text-align: center;">●</td> <td style="text-align: center;">Spatter reduction</td> <td style="text-align: center;">● ● ●</td> </tr> <tr> <td style="text-align: center;">●</td> <td style="text-align: center;">Penetration and edges fusion</td> <td style="text-align: center;">● ● ●</td> </tr> <tr> <td style="text-align: center;">●</td> <td style="text-align: center;">Productivity</td> <td style="text-align: center;">● ● ● ●</td> </tr> </table>	● ●	Bead shape	● ● ● ●	● ●	Joint appearance	● ● ● ●	●	Spatter reduction	● ● ●	●	Penetration and edges fusion	● ● ●	●	Productivity	● ● ● ●	<p style="text-align: center;"> <i>Greater control over the weld pool and reduction in the risk of underfills</i></p>
● ●	Bead shape	● ● ● ●																
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●	Spatter reduction	● ● ●																
●	Penetration and edges fusion	● ● ●																
●	Productivity	● ● ● ●																
Cored Wire (*)	For all thicknesses	ARGOPRO C-8(*) 	HELIPRO HP1(*)  															

(*) Recommended where the use of a specific mixture is not expressly indicated by the wire manufacturer

It is possible to learn more on the characteristics of each mixture in the tables on pages 21/22/23

PERFECT FOR:

 Manual welding

 Automated welding



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TIG

Plasma

Laser

< 3 mm
 > 3 mm
 < 3 mm
 > 3 mm
 For all thicknesses

STANDARD MIXTURE

HIGH-PERFORMANCE MIXTURE

ARGOPRO industrial grade 



● ●
 ●
 ●
 ●





HYDRAPRO H-3  






● ● ● ●
 ● ● ● ● ● ● ● ●
 ● ● ● ● ● ● ● ●
 ● ● ● ● ● ● ● ●

✓ Perfect deoxidation of the weld bead

ARGOPRO industrial grade 

HYDRAPRO H-5  
 HYDRAPRO H-10  

ARGOPRO 5.0 (Plasma Gas) 
 ARGOPRO industrial grade (Shielding Gas) 

-
 HYDRAPRO H-3 

ARGOPRO 5.0 

HELIPRO mixtures 



CASE STUDY
 BENEFITS OF HYDROGEN IN WELDING MIXTURES

A Parma company carrying out **automated TIG welding** of pipes in stainless steel 316 and 304 in various thicknesses, was unable to achieve satisfactory results in terms of quality and colour of the weld bead by using just Argon. Running a few tests, we observed that the use of the mixture **HYDRAPRO H-10**, thanks to Hydrogen's action, enables achieving a **deoxidized weld bead, eliminating the risk of deformations thanks to a lower heat input**. The mixture also enables significantly increasing weld speed, bringing significant benefits in terms of quality and savings.



FOCUS
 TIG PROCESS

Thanks to the constant research on TIG technology, we can recommend the most suitable Welding PRO mixture to obtain:

- Increased quality and productivity
- Cost cutting
- Elimination of oxides.

FIND OUT MORE



Weld purging

Weld purging is a technique where an inert gas is used to protect the welding of the initial pass in joints with complete penetration.

The presence of Oxygen can in fact lead to the formation of oxidation, tempering colours, or even “burns” that can seriously compromise the strength of the materials.

The use of Hydrogen in combination with an inert gas can further reduce the formation of tempering colours thanks to the reducing effect of this element.

Sectors such as food and pharmaceuticals, where hygiene and cleanliness matter most, require the absolute absence of tempering colours and nitrides. Therefore, the use of Argon and Hydrogen is recommended to shield the root run.



FOCUS SHIELD GAS

One of our strengths is the support we provide to our Customers in choosing the best gas for purging.

Our mixtures enable obtaining:

- Marked reduction in tempering colours
- Complete resistance of the weld bead to corrosion
- Full protection against burn marks.

FIND OUT MORE



Back
shielding

For all
thicknesses

STANDARD MIXTURE

HIGH-PERFORMANCE MIXTURE

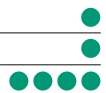
Nitrogen industrial grade



Avoids the formation of nitrides

Avoids cracks risk

Bead deoxidation



Perfectly deoxidized bead thanks to the presence of hydrogen

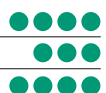
ARGOPRO industrial grade



Avoids the formation of nitrides

Avoids cracks risk

Bead deoxidation



Reduce the joint defects risk



Perfectly deoxidized bead thanks to the presence of hydrogen

HYDRAPRO N-95












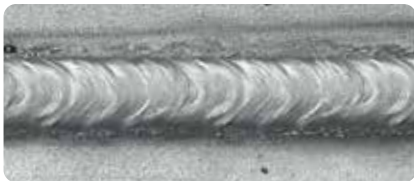
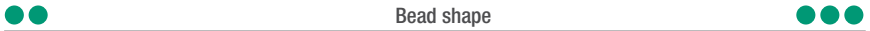





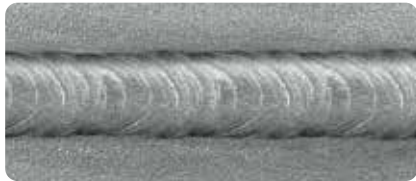










HYDRAPRO H-5



It is possible to learn more on the characteristics of each mixture in the tables on pages 21/22/23

Martensitic stainless steels (AISI 400-500)

Martensitic stainless steels are chromium alloys (between 11 and 18%) with relatively high carbon (up to 1.1%), containing small quantities of manganese, silicon and molybdenum. They have very high mechanical characteristics and good machinability. Depending on the quality and expected use, ductility can be increased by tempering.

		STANDARD MIXTURE	HIGH-PERFORMANCE MIXTURE
MIG-MAG	< 4 mm	ARGOPRO 0-2 	HELIPRO HP1  
	> 4 mm		HELIPRO HP4  
Cored Wire (*)	For all thicknesses	ARGOPRO C-2(*) 	HELIPRO HP1(*)  
TIG	< 4 mm	ARGOPRO industrial grade       Wide weld pool with lower risk of underfills	HELIPRO HE-5   
	> 4 mm	ARGOPRO industrial grade 	HELIPRO HE-30  
Plasma	< 3 mm	ARGOPRO 5.0 (Plasma Gas) 	-
	> 3 mm	ARGOPRO industrial grade (Shielding Gas) 	HELIPRO HE-30 
Laser	For all thicknesses	ARGOPRO 5.0 	HELIPRO mixtures 
Back shielding	For all thicknesses	Nitrogen industrial grade 	ARGOPRO industrial grade 

(*) Recommended where the use of a specific mixture is not expressly indicated by the wire manufacturer

It is possible to learn more on the characteristics of each mixture in the tables on pages 21/22/23

PERFECT FOR:



Manual welding



Automated welding

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HELI PRO

OUR DIFFERENCE,
YOUR ADVANTAGE.



SIAD Welding PRO
is always top quality
but with something extra:
your satisfaction

HELIPRO, the welding gas mixtures product line with Helium that optimize results in welding. A line created especially for automated processes to ensure you get the best results in every weld.

SIAD HELIPRO: for getting the best on every operation.

#SIADisEverywhere

















WATCH THE VIDEO

 **SIAD**

Aluminium, titanium, nickel, copper, bronzes, brasses and other reactive metals

The main characteristics of aluminium alloys are high ductility, low specific weight and excellent weldability. Titanium alloys combine great lightness and very high mechanical strength, comparable to that of steel. Copper has a high capacity for forming alloys (brass, bronze and cupronickel), with excellent characteristics such as mechanical resistance to abrasion and corrosion, machinability and ductility.

		STANDARD MIXTURE	HIGH-PERFORMANCE MIXTURE
MIG-MAG TIG	< 5 mm	ARGOPRO 5.0   ● Bead shape ●●●● ●● Joint appearance ●●●● ● Penetration and edges fusion ●●●●  Greater fluidity of the welding due to increased arc stability	HELIPRO HE-30   ●●●● Bead shape ●●●● ●●●● Joint appearance ●●●● ●●●● Penetration and edges fusion ●●●●
	> 5 mm	ARGOPRO 5.0 	HELIPRO HE-50 
Plasma	< 4 mm	ARGOPRO 5.0 (Plasma Gas) 	-
	> 4 mm	ARGOPRO industrial grade (Shielding Gas) 	HELIPRO HE-30 
Laser	For all thicknesses	ARGOPRO 5.0 	HELIPRO mixtures 
Back shielding	For all thicknesses	Nitrogen industrial grade 	ARGOPRO 5.0 

It is possible to learn more on the characteristics of each mixture in the tables on pages 21/22/23

PERFECT FOR:

 Manual welding

 Automated welding



CASE STUDY HELIUM IN WELDING ALUMINIUM ALLOYS









One company that has been able to seize on the advantages of Argon and Helium mixtures for welding aluminium is IMIS S.r.l. in Naples, which makes pipes, containers and casings for compression and air separation systems. The company, thanks to the use of **HELIPRO HE-30**, observed a **distinct improvement in the stability of the arc and has been able to increase speed, especially in automated processes**. Aesthetically, the **weld bead is now wider** and macrographic examinations have been able to confirm a **more uniform penetration**.



























CONTACT US

SIAD provides their know-how to run tests in order to find the most suitable mixture for the process you are using
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Other steels

Duplex and Super Duplex steels can offer an excellent combination of strength and resistance to corrosion to significantly reduce the thickness of the material, and therefore the costs, in various applications. Galvanised steels are usually zinc-coated carbon steel laminates. Coating with this metal enables combining the mechanical characteristics of carbon steel with resistance to corrosion.

Duplex and Super Duplex	MIG-MAG	HELIPRO HE102N	 
	TIG	ARGOPRO 2N	 
	Laser	ARGOPRO 5.0 HELIPRO mixtures	
Galvanised steels	MIG-MAG	ARGOPRO C-8	
		HELIPRO GV	 

	Bead shape	  
	Joint appearance	  
	Spatter and fumes reduction	  
 	Penetration and edges fusion	  
 	Speed	+25 - 35%   
	Porosity reduction	  

It is possible to learn more on the characteristics of each mixture in the tables on pages 21/22/23

PERFECT FOR:



Manual welding



Automated welding



CASE STUDY INNOVATIVE MIXTURES

Listening to our Customers' needs is a core feature that has always set us apart. Upon request of the customer Baker Hughes a GE company, Nuovo Pignone, Massa facility, we studied an Argon/Nitrogen mixture to **improve the welding performance** of the Super Duplex steel used in the production of submarine pipelines and connections.

Thus **ARGOPRO 2N** was born, the new mixture now used by various Customers, that thanks to the addition of a small percentage of nitrogen to the argon enables **lowering the risk of interstitial corrosion and chloride pitting**.

Focus - Automated welding

Plasma welding

In recent years, Plasma welding has become increasingly popular thanks to its high performance. The greatest performance in terms of speed and penetration is achieved especially thanks to the gas mixtures used. Indeed, plasma torches have the option of using two gases, and the right combination offers significant performance: at the same welding current, it is possible to have higher speeds by 30%, in addition to a better control of the weld pool, all to the benefit of productivity.

Laser welding

Laser welding technology has now replaced traditional technologies in many processes, due to the greater precision and the superior mechanical characteristics of the joint that can be obtained. In principle, laser enables welding without issues for a greater variety of materials, including galvanised steels. Depending on the specific requirements of the process, SIAD offers gases and mixtures that, by interacting with the laser beam, determine the optimal energy input on the piece to be welded.

Advantages that can be obtained with the optimal use of gases and mixtures

ARGOPRO 5.0

- ✓ Improved welding arc stability
- ✓ Increased cleaning of welded joint
- ✓ Greater quality of welded joint.

HELIPRO mixtures

- ✓ Greater fluidity of the weld pool
- ✓ High welding speed
- ✓ Increased process efficiency.

HYDRAPRO mixtures

- ✓ Reduced formation of oxidation
- ✓ Greater weld penetration
- ✓ Increased cleaning of weld bead.

Helium / HELIPRO mixtures

The energy of the laser beam in contact with the material forms plasma which, if excessively dense, could compromise the process (shielding effect). Helium is the most suitable gas for the laser welding process thanks to its physical properties; having reduced molecular weight, high thermal conductivity and a high ionization potential, it reduces the density of plasma. By using it, it is therefore possible to obtain:

- ✓ Excellent penetration and appearance of the bead
- ✓ Increased welding speed.

FIND OUT MORE



FIND OUT MORE



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Summary table of welding mixtures

Name Sales	Code EN ISO 14175	Fitting valves Standard UNI 11144	Ar	CO ₂	He	O ₂	H ₂	N ₂	Characteristics
ARGOPRO	I1	Group 8	●						Gas used as base for all welding mixtures , thanks to its ability to remain inert even at high temperatures.
ARGOPRO 5.0	I1	Group 8	●						High-purity gas used for welding materials “sensitive” to oxidation to improve the characteristics of the welded joint . Strongly recommended for welding aluminium, titanium, copper, brass and other reactive metals . Suitable for all welding processes.
ARGOPRO 0-2	M13	Group 8	●			●			Standard mixture for welding martensitic stainless steels (AISI 400).
ARGOPRO 0-5	M22	Group 8	●			●			Standard mixtures with good penetration capacity , used for welding medium thickness carbon steel with MIG/MAG processes . Marked presence of surface oxidation.
ARGOPRO 0-8	M22	Group 8	●			●			
ARGOPRO C-2	M12	Group 8	●	●					Standard mixture for welding stainless steel (AISI 300) with MIG/MAG process .
ARGOPRO C-8	M20	Group 8	●	●					Standard mixture with good penetration capacity , used for welding carbon steel, medium low thickness , with MIG/MAG processes .
ARGOPRO C-13	M20	Group 8	●	●					Standard mixtures with good penetration capacity , used for welding medium thickness carbon steels with MIG/MAG processes .
ARGOPRO C-15	M20	Group 8	●	●					
ARGOPRO C-18	M21	Group 8	●	●					
ARGOPRO C-25	M21	Group 8	●	●					Standard mixture with strong penetration capacity , used for welding high thickness carbon steels with MIG/MAG processes .

Name Sales	Code EN ISO 14175	Fitting valves Standard UNI 11144	Ar	CO ₂	He	O ₂	H ₂	N ₂	Characteristics
ARGOPRO SCH1	M14	Group 8	●	●		●			High-performance mixtures particularly recommended for welding carbon steels . IT is also possible to use them occasionally for welding stainless steel .
ARGOPRO SCH2	M14	Group 8	●	●		●			
ARGOPRO PB	M14	Group 8	●	●		●			
HYDRAPRO H-2	R1	Group 8	●				●		High-performance mixture recommended for welding stainless steels (AISI 300) up to 2 mm thick , with TIG process .
HYDRAPRO H-3	R1	Group 1	●				●		High-performance mixture recommended for welding stainless steels (AISI 300) up to 3 mm thick , with TIG process .
HYDRAPRO H-5	R1	Group 1	●				●		High-performance mixture recommended for welding stainless steels (AISI 300), between 3 and 5 mm thick, with TIG process.
HYDRAPRO H-7	R1	Group 1	●				●		High-performance mixture recommended for welding stainless steels (AISI 300) , between 5 and 7 mm thick , with TIG process .
HYDRAPRO H-10	R1	Group 1	●				●		High-performance mixture recommended for welding stainless steels (AISI 300) of high thickness, with TIG process .
HYDRAPRO H-35	R1	Group 1	●				●		High-performance mixture recommended for welding stainless steels (AISI 300) of very high thickness, with TIG process .
HELIPRO HE-5	I3	Group 8	●		●				High-performance mixture particularly recommended for welding all alloys of aluminium and reactive metals , of very low thicknesses , suitable for all processes.
HELIPRO HE-30	I3	Group 8	●		●				High-performance mixture particularly recommended for welding all alloys of aluminium and reactive metals , less than 5 mm thick , suitable for all processes.
HELIPRO HE-50	I3	Group 8	●		●				High-performance mixture particularly recommended for welding all alloys of aluminium and reactive metals , more than 5 mm thick , suitable for all processes.
HELIPRO HE-70	I3	Group 8	●		●				High-performance mixture particularly recommended for welding all alloys of aluminium and reactive metals , with significant thicknesses , suitable for all processes.
HELIPRO GV	M20	Group 8	●	●	●				High-performance mixture recommended for welding galvanised steels with MIG/MAG process . While the optimal application would be with pulse arc , it is also possible to use with short-arc .
HELIPRO HP-1	M12	Group 8	●	●	●				High-performance mixture recommended for welding stainless steels and carbon steels , medium high thickness , with MIG/MAG process .

Name Sales	Code EN ISO 14175	Fitting valves Standard UNI 11144	Ar	CO ₂	He	O ₂	H ₂	N ₂	Characteristics
HELIPRO HP-3	M24	Group 8	●	●	●	●			High-performance mixture recommended for welding stainless steels and carbon steels, high thickness, with MIG/MAG process.
HELIPRO HP-4	M12	Group 8	●	●	●				High-performance mixture recommended for welding stainless steels and carbon steels, high thickness, with MIG/MAG process.
HELIPRO HP-31	M20	Group 8	●	●	●				Mixtures recommended for Fronius CMT process.
HELIPRO HP-41	M24	Group 8	●	●	●	●			
HYDRAPRO PB SS	M11	Group 8	●	●			●		High-performance mixture recommended for welding stainless steels (AISI 300) with MIG/MAG process.
HYDRAPRO T300	R1	Group 1	●		●		●		High-performance mixture recommended for welding stainless steels (AISI 300) with automatic TIG process.
ARGOPRO 2N	N2	Group 5	●					●	High-performance mixture ideal for welding Duplex and Super Duplex steels.
HYDRAPRO N-25	N5	Group 1					●	●	Mixtures used in plasma cutting with pantograph.
HYDRAPRO N-85	N5	Group 1					●	●	
HYDRAPRO N-95	N5	Group 5					●	●	High-performance mixtures recommended for carbon steels and stainless steels in Weld purging.
HYDRAPRO N-90	N5	Group 1					●	●	
HELIPRO HE102N	N2	Group 8	●		●			●	High-performance mixture ideal for welding Duplex and Super Duplex steels with MIG process.

- ✓ All gases and mixtures in the Welding PRO line meet the requirements of code EN ISO14175.
- ✓ Alongside its partner IIS (Istituto Italiano di Saldatura: Italian Welding Institute), SIAD organises theoretical and practical courses for the achievement of IWS, IWP, EWT certifications, in accordance with national and international standards.
- ✓ SIAD and IIS also conduct accreditations of welding procedures in compliance with the main national and international codes and standards.



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Laser cutting



Assist gases play a key role in laser cutting in order to fully exploit the potential of this technology

Laser cutting of metals differs depending on the material worked.

Combustion cutting for cutting carbon steels and alloyed steels used for construction.

This technique involves Oxygen to:

- Facilitate the exothermic reaction with the metal, allowing higher work speeds
- Expel molten material from the kerf created
- Protect the lens from spray and vapours.

Fusion cutting is used in working stainless steels and high alloy steels and other non-ferrous metals.

This technique uses inert gases that do not contribute to the fusion but have the following purposes:

- Not oxidize the edges
- Expel molten material from the kerf created
- Protect the lens from spray and vapours
- Cool the sides of the kerf, thus reducing the heat-affected zone.

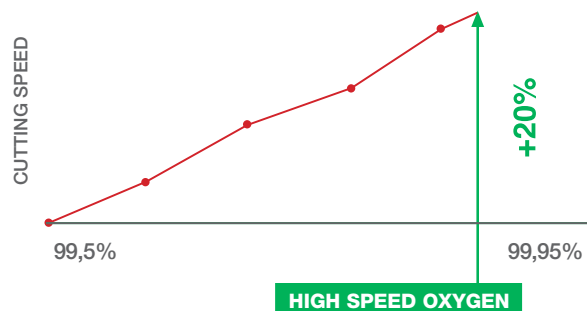


FOCUS ROFIN SINAR DCOXX

SIAD laboratories are authorised to produce the laser mixture Roфин Sinar at a European level. SIAD thus ensures a product of extremely high quality dedicated to creating the laser beam in SLAB sources.

High Speed Oxygen in laser flame cutting

With its purity, High Speed Oxygen can significantly increase the cutting speed, even with increasing thicknesses. The near total absence of water vapour and hydrocarbons helps to preserve the lens.



Increase in cutting speed with increasing purity

The results that can be obtained from the use of High Speed Oxygen

- ✓ Increase in cutting thickness
- ✓ Greater protection of the lens from the spray of material and vapours produced
- ✓ Greater productivity, with increase in cutting speed up to 20%
- ✓ Greater cut quality.

The Laser PRO mixtures in laser fusion cutting

This process requires using nitrogen as assist gas for most materials.

To avoid oxidation effects, SIAD recommends their Nitrogen Laser at high purity (> 99.999%).

For aluminium alloys, we recommend using mixtures of Nitrogen and Oxygen. Titanium and magnesium alloys, instead, are cut using Argon.

Using high-purity Nitrogen or ARGOPRO enables:

- ✓ Reducing the oxidation of edges
- ✓ Protecting the lens more
- ✓ Preventing the focusing conditions of the laser beam from being altered
- ✓ Greater cut quality
- ✓ Greater cut definition.

	ASSIST GAS	PURITY	MAX PRESSURE
Carbon steels and alloys for construction	High Speed Oxygen	> 99.95%	6 bar
	Nitrogen Laser	> 99.999%	30 bar
Stainless steels	Nitrogen Laser	> 99.999%	30 bar
Nickel alloys			
Copper alloys, bronzes and brasses			
Titanium alloys and magnesium alloys	ARGOPRO 5.0	> 99.999%	15 bar
Aluminium alloys	Nitrogen Laser	> 99.999%	30 bar
	Nitrogen/Oxygen mixture		5 bar



FOCUS Laser PRO

Laser PRO is the line of pure gases and mixtures dedicated to laser applications that SIAD has developed, in collaboration with the main operators in the sector, to follow and satisfy the continuing development of this technology. The Laser PRO line includes both assist gases and laser mixtures dedicated to CO₂ laser sources.

FIND OUT MORE



Plasma cutting



Using SIAD high-performance gases and mixtures sharply improves cut quality and speed

Plasma Arc Cutting is a cutting process that involves the combined action of a gas - blown at high speeds through a nozzle - and an electrical arc.

The reaction of this gas in contact with this electrical arc ensures it transforms into plasma.

The plasma transfers heat to the metal, bringing it to the melting temperature and thus breaking the continuity of the metal.

Gases affect the quality of the cut and must be chosen depending on the material.

It is essential to consider the physical properties of the gases, such as ionization and dissociation energy, thermal conductivity, atomic weight and chemical reactivity.

Usually, in this process, 2 different gases are used:

- **Plasma gas**, which is highly ionizing, enables generating the plasma
- **Assist gas**, with the purpose of helping remove the metal and protecting the edges of the cut material from oxidation.

Together with the major system manufacturers, SIAD has conducted experiments to optimise the process of plasma cutting, thus developing a range of gases and mixtures that constitute a wealth of knowledge available to their Customers.



CASE STUDY

THE OPTIMAL USE OF GASES IN PLASMA CUTTING

The company Fratelli Piovesan in San Giorgio di Nogaro (UD), specialised in the production of stainless steel bends made from sheet metal, is an example of optimal gas use for plasma cutting and welding.

Plasma for cutting 304L stainless steel sheet metal is generated with high-purity nitrogen for thicknesses between 3 and 12 mm. For greater thicknesses (up to 70 mm), using the HYDRAPRO H-20 mixture - thanks to the high thermal conductivity of hydrogen - enables transferring a lot of energy and therefore reach greater cutting speeds.

Gases and mixtures used in plasma cutting

Compressed air

- Consistent reduction of torches wear parts life
- Nitriding in the cutting of ferrous steels
- Oxidation in stainless steels.

Nitrogen

- ✓ Used for fast cuts free of oxidation for medium and thin thicknesses
- ✓ Increase of wear parts life up to 3 times greater compared with the use of compressed air
- Possible nitriding of the metal on cut surface.

HYDRAPRO mixtures

- ✓ Enable exploiting hydrogen's properties significantly improving cut quality parameters for stainless steels, light alloys and nickel alloys
- ✓ The increase in the percentage of Hydrogen with increasing thickness enables high cutting speeds

- ✓ The Argon content facilitates the arc ignition due to its low ionization potential.

Oxygen

- ✓ In carbon steel cutting, it enables achieving regular, brilliant cuts, without dross or burrs thanks to the exothermic reaction with the iron
- ✓ High cutting speeds
- ✓ Reduced heat-affected zone.

Methane

- ✓ Has a high calorific value and improves cut quality of aluminium alloys
- ✓ Increase in cutting speed.

		PLASMA GAS		ASSIST GAS	
Carbon steels and alloys for construction	< 8 mm	Oxygen industrial grade	Nitrogen	Nitrogen	Oxygen industrial grade
	> 8 mm		HYDRAPRO H-35		
Stainless Steel					
Austenitic (AISI 300)					
Martensitic (AISI 400-500)	< 6 mm	Nitrogen Laser 5.0	HYDRAPRO H-10 H-20	Nitrogen Laser 5.0	
	> 6 mm		HYDRAPRO H-35		
Duplex and Super Duplex					
Nickel alloys					
Copper alloys					
Bronzes and brasses					
Aluminium alloys	< 8 mm	Nitrogen Laser 5.0	HYDRAPRO H-35 (only for Al alloys)	Nitrogen Laser 5.0 ARGOPRO 5.0 (Ti alloys)	Methane (Al alloys)
	> 8 mm				
Titanium alloys					
Reactive metals					

Automation

3D PRINTING

Prototyping

Spare
parts

Additive
manufacturing

A hand is shown pointing towards a 3D printed object, which is partially visible. The background is a dark blue gradient with a white hexagonal grid pattern. The central hexagon is highlighted in a darker blue and contains the text '3D PRINTING'. Other hexagons contain the text 'Automation', 'Prototyping', 'Spare parts', and 'Additive manufacturing'. The overall image conveys the concept of 3D printing in a modern, technological context.

Additive Manufacturing

High-purity gases for excellent results in additive manufacturing processes

- ✓ **SUPPORT** in adopting the technologies
- ✓ **CONSULTANCY** on the process and the product
- ✓ **INNOVATION** thanks to the study on the gases used

SIAD is directly involved in the processes of additive manufacturing via the supply of high-purity inert gases.

These gases are used both for **inertizing the process chamber** in systems with powder bed, for **transporting the powders**, and for **protecting the laser beam** in direct deposition processes.

The main gases used are nitrogen and argon, and their use is highly important in preventing the oxidation of the powders used.

SIAD is active in researching new mixtures that can improve the quality of the components made. Cooperating with companies that use this technology and the presence in various *FabLab* enables SIAD to provide know-how for the continuous development and control of the process.

CONTACT US

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FOCUS POST-PROCESSING MATERIAL TREATMENT

The components made with additive manufacturing are treated both thermally, to reduce residual stresses and improve their mechanical properties, and mechanically, to obtain the desired final geometry. To reduce internal defects, among which the most noteworthy is porosity, some materials can be subject to the HIP process, or Hot Isostatic Pressing.

FIND OUT MORE



ADDITIVE MANUFACTURING

Additive Manufacturing or 3D printing means making components by depositing layers of material one over the other, starting from digital 3D models.

FIND OUT MORE





Supply methods

With SIAD, supplies suit your production process.
Reliability, timeliness and security, wherever and whenever you want!

Small- or large-scale uses?

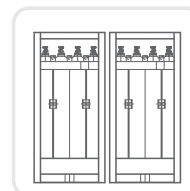
Full service or no-frills?

Our gases, cryogenic or compressed, are supplied in a wide range of containers:

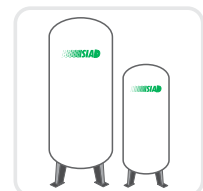
- **Cylinders and cylinder packs** available in various capacities
- **Containers for cryogenic gases** in liquid phase available in various capacities
- **Flexigas**, minibulk for more flexible supplies.



CYLINDERS



CYLINDER PACKS



CRYOGENIC
CONTAINERS

Declarations of conformity and certificates of analysis

Issued upon request, referring to standard or custom parameters depending on the various quality, certification or process requirements.

Certificates of analysis and declarations of conformity follow the product and the Customer anywhere, and are available 24/7 on the SIAD Online Customer Area.

FIND OUT MORE
ON THE METHODS OF SUPPLY



FOCUS DISPOSAL OF ACETYLENE CYLINDERS

Thanks to Tecnoservizi Ambientali, SIAD can offer their Customers a disposal service for acetylene cylinders.

At the end of service, the Customer receives from Tecnoservizi Ambientali the final certificate of disposal.

This service is offered both to operators in the sector and private individuals.

FIND OUT MORE



Flexigas



Customer-friendly service

Flexigas is the SIAD service that ensures, with the use of mobile cryogenic containers, the continuous availability of high-quality gas and dispensing features that can be adapted to the needs of various production processes.

Flexigas can be adapted for different types of gases and mixtures, and therefore for a wide variety of application fields.

The Flexigas mini bulk have the feature that they can be refilled on site or replaced with full ones in exchange for empty ones according to requirements.

The strengths of Flexigas can be summarised as:

- ✓ Greater quantity of gas with the same footprint as one cylinder pack
- ✓ Maintenance included in the service and scheduled by SIAD
- ✓ Availability of various types of gases and mixtures
- ✓ No additional space required for applying for a pad up to standard
- ✓ Continuous availability of gas thanks to remote control and automatic reordering.

Flexigas by SIAD



CASE STUDY THE ADVANTAGES OF FLEXIGAS



Stilmas S.p.A. in Settala (MI), world leader in the generation, storage and distribution of ultra-pure fluids for pharmaceutical use, has for years used the SIAD gases and mixtures for their Orbital welding system. With the growing volume of orders, the usual supply of argon packs did not ensure the required production autonomy.

The installation of a cryogenic container would have required an investment in time and money for the construction of a pad up to standard, in addition to space issues.

The supply of micro bulk via the **Flexigas service resolved the issue**. Using the 800-liter micro bulk with the same footprint as 1 cylinder pack, it was possible to deliver the same quantity of argon as 3 cylinder packs. This way, the customer was able to support their own production growth, **without the installation costs** for a new fixed cryogenic container, dedicating the same space they previously dedicated to gas storage.

Platinum



Gas management services

Platinum is the offer that allows Customers to make SIAD's know-how their own to ensure a custom supply.

From gas distribution to system control. Specialised personnel available for any requirement, 24/7. Team Platinum analyses the features and needs of production, safety and maintenance to develop a custom service programme.

- ✓ Lower management costs
- ✓ Safe and reliable use of gases
- ✓ Increased productivity
- ✓ Continuous availability of the product.



LOGISTICS AREA

Cylinder and gas management, according to the specific needs of customers:

- Delivery to point of use
- Management of stock in the field
- Automatic reordering
- Replacement of containers at point of use.



CONTROL AND MAINTENANCE AREA

Full monitoring starting with the remote control of operating parameter levels of gas systems (compressed or cryogenic), to the more technical aspects concerning safety and guaranteed gas quality up to the point of use:

- Remote control and remote sensing
- Analysis at the point of use
- Safety technical inspections
- Maintenance of distribution systems.



TRAINING AND CONSULTANCY AREA

The most suitable solution to every technical, regulatory and training requirement:

- Training and instruction
- Technological consultancy
- Analytical assistance service
- Regulatory and technical consultancy.

Construction yards

Ease of management, high availability of packaging and widespread presence in the territory.

This is what sets SIAD services apart for shipyards

For the construction sector, in addition to a wide range of gases and mixtures, SIAD offers specific services to facilitate the companies that work in shipyards.



SINGLE CONTACT PERSON

All yards that belong to the same company can have a single contact available with the possibility of centralising purchases.

- Single negotiation conducted by Central Office
- Single order issued with identical conditions for all yards.



MONITORING OF CYLINDERS

Possibility of monitoring the situation of the cylinders on a monthly basis.

- Sending to the customer a monthly statement of the cylinders supplied
- SIAD's prompt intervention to check any misalignments.



CENTRALISED MANAGEMENT OF TAX AND TRANSPORT DOCUMENTS

- Monthly invoicing and transport document sending, with yard cost division.
- Risk of document loss eliminated.



FOCUS COURSES

SIAD offers their experience providing the most suitable solution to every regulatory and training requirement.

Welding courses

Both practice and theory and can be adapted to the customer's requirements.

Courses for welding certifications

Conducted by the major specialists in the sector and essential for certifying the welding process.

IWP (Welding Inspector)

Designed to issue national and international qualifications for certifying processes / products.

Gas distribution systems

SIAD designs and manufactures “turnkey” gas distribution systems with the highest quality and safety criteria

The distribution system plays a key role as the quality and purity of the gas depend on it, ensuring that the design specifications required by the manufacturers of cutting and welding systems are effectively complied with.

Equipment

The distribution system consists of:

- a first-stage decompression system
- second-stage reduction systems to adjust the gas pressure necessary for each utility.

Checks, tests and maintenance

Each system is checked and tested with leak tests according to qualified procedures (in reference to UNI EN 737/3 and UNI 11627:2016). Regular maintenance may be included in the supply contract.

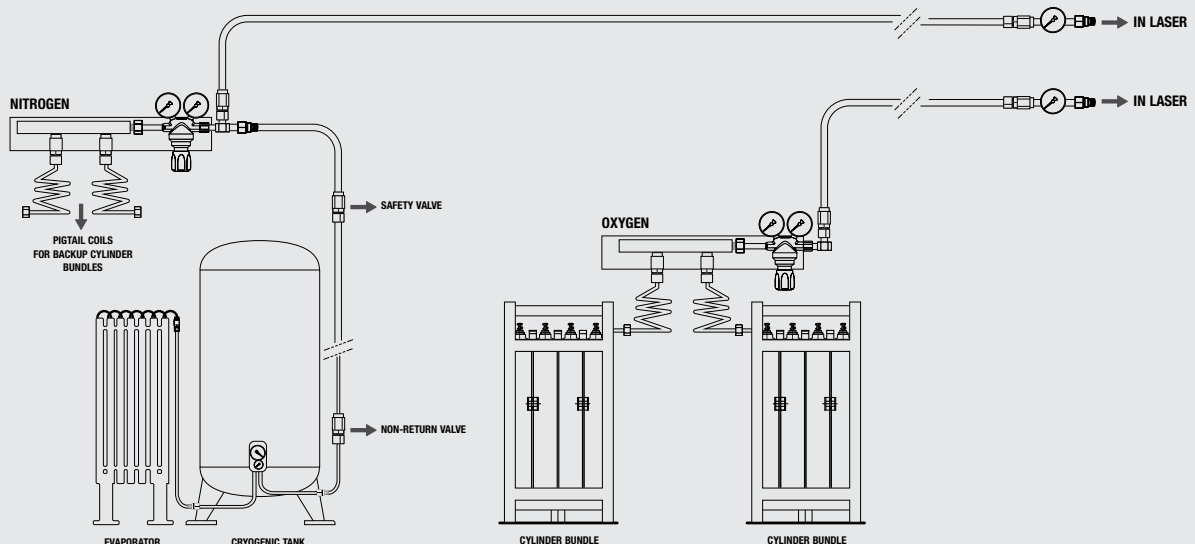
Distribution lines: pipelines and fittings

The pipes used, exclusively in stainless steel (AISI 304 / 316L) and copper, are rigorously degreased, pickled and plugged to check their cleaning and reduce the possible impurities absorbed.

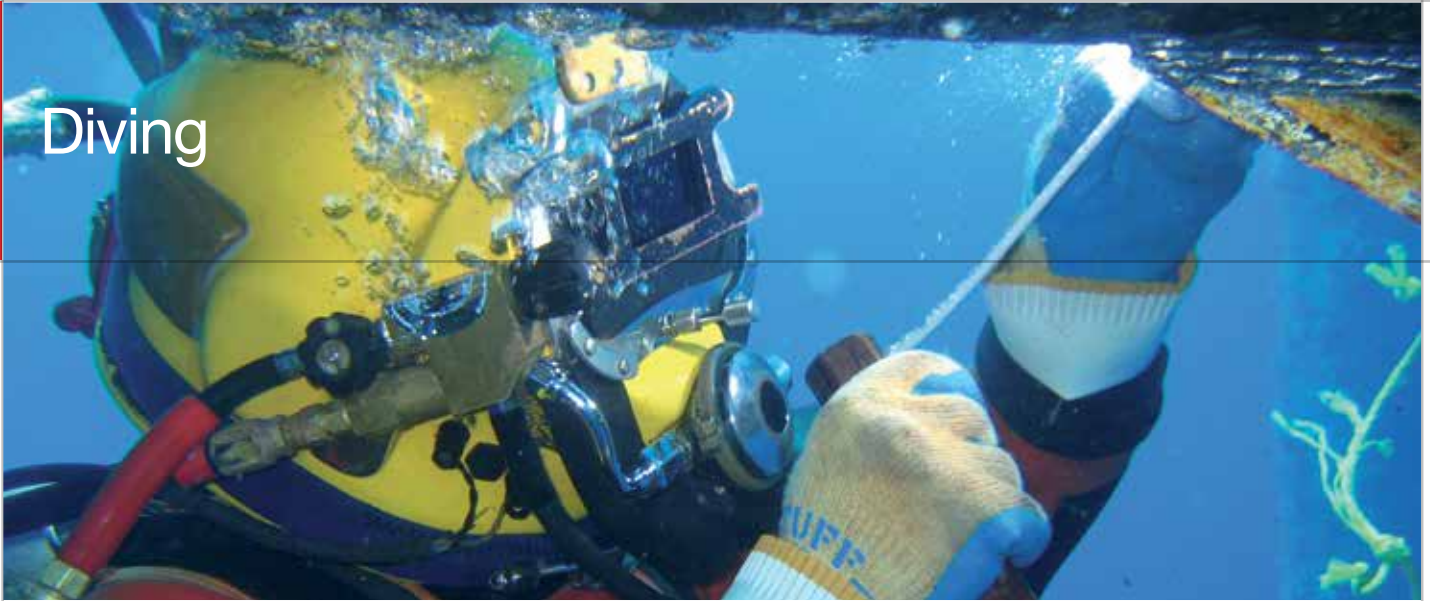
Cryogenic tanks and pumps

Any connection to the distribution system of cryogenic containers with operating pressures that range from 15 to 35 bar is immediate, and does not require changes to the system already prepared for dual supply.

STANDARD CONFIGURATION OF A GAS DISTRIBUTION SYSTEM FOR THE SUPPLY OF 1 LASER CUTTING MACHINE



Diving



Gases and solutions for the offshore industry

Diving gas

SIAD manufactures and distributes all **breathing gases** such as **Heliox, Nitrox, Trimix, Recovery mix**, breathing **Oxygen** and **Helium**.

SIAD also supplies nitrogen and helium mixtures for the leak tests of offshore systems.

Diving gases are **made in Italy** following the strictest quality standards and procedures. All gases are manufactured according to the quality standards set by standard BS EN 12021:2014.

Welding gas

Underwater welding is done with the same techniques as those used on the surface. In the case of arc welding, the voltaic arc is kept active within a flow of oxygen under pressure.

For major operations, a bell is used filled with gas at the same pressure as the surrounding water, within which the welder works in dry conditions.

Calibration mixtures

Used mainly to ensure safety in the workplace and for a quality control of the raw materials, SIAD mixtures are made by the research laboratory based on strict safety, precision and quality standards.

Cleaning systems and leak tests

SIAD offers cryogenic tanks certified for offshore use, that can be filled with SIAD nitrogen loaded directly at the port.

Thanks to a partnership with an international player, SIAD uses DNV 2.7-1 certified packaging



QUAD 16 CYLINDERS



QUAD 48 CYLINDERS



QUAD 64 CYLINDERS



CYLINDER LIFT FRAME



FOCUS

SIAD OFFSHORE CENTRE IN RAVENNA

Ravenna is one of the Mediterranean shipbuilding capitals, in addition to being the first industrial district in the Oil&Gas sector in Italy. SIAD is present in Porto San Vitale with a centre specialised in products and services dedicated to offshore activities, a true hub for professional diving and industrial activities at sea.

SIAD Customer Area

Discover the new SIAD Online Customer Area!

The advantages of SIAD online:

- ✓ Order in complete autonomy
- ✓ Cylinder stock reports
- ✓ Cylinder rental fee (MDB) explanations
- ✓ Account statements
- ✓ Find all the commercial and technical information you need.



THOROUGHNESS AND TRANSPARENCY

All the information at your disposal



EASE OF USE

Simple and intuitive to use



AUTONOMY

You can use it at any time and in real time

REGISTER FOR FREE and you will immediately have access to a space dedicated to your needs, that will allow you to use our services at **any time, easily** and in complete **autonomy**

FIND OUT MORE



siadonline.com



DIFFERENCE

SIAD MOBILE: YOUR ORDERS ALWAYS ON YOUR SMARTPHONE!

With the *SIAD Mobile App* you no longer need to be in the office to order gas: you can access the innovative SIAD app at any time of the day, ordering completely independently from your cell phone. You can create a new order or replicate a previous one, and thanks to the tracking system you will know exactly the status of the order and the expected delivery date.

In addition, thanks to barcode scanning, the order can be placed even by those unfamiliar with gas names!

Innovation and Synergies

The wide range of SIAD gases and services is also possible thanks to the companies of the Group and our partners

For those who work in the fields of welding, cutting and additive manufacturing, SIAD, also thanks to partnerships with leading companies in the sector, provides **innovative mixtures and technologically advanced solutions**.

The study of high-performance mixtures, in cooperation with universities and research centres, over the years allowed the company to ensure the **effectiveness of its products, always scientifically proven** by experts and researchers.

The partnerships with system developers allow us to **provide support starting with the introduction of the process** all the way to the choice of the best gas.



ROBOTECO ITALARGON

Roboteco-Italargon is a leader in Italy in the supply of automatic, semi-automatic welding systems and turnkey robotic cells.

The technology offered has just one CPU oversee both the management of the robot's movements and the control of the electric arc, without using analogue-digital interfaces: the welding machine and the wire feeder are thus managed as a synchronized robot axis.

ROBOTECO ITALARGON
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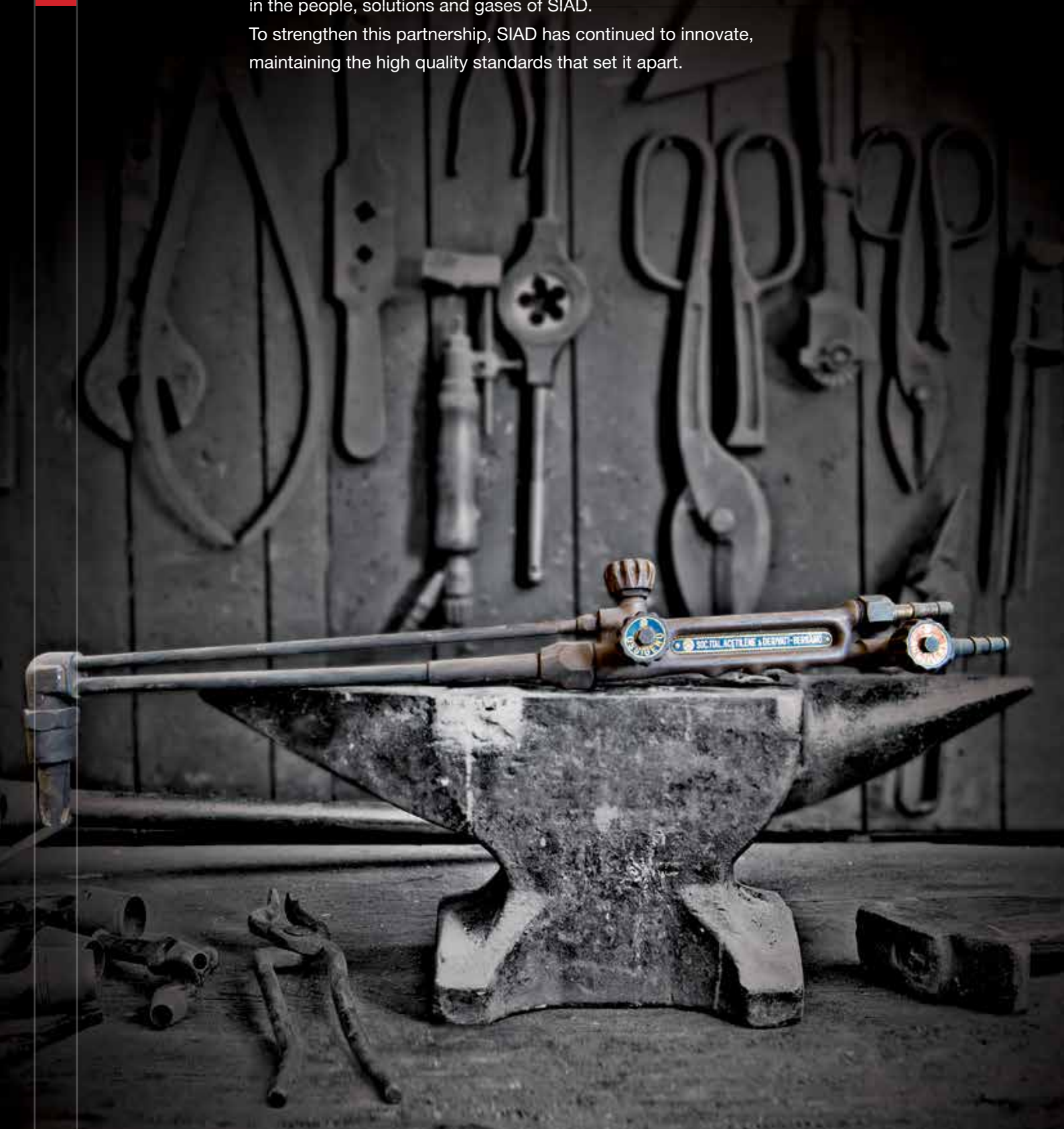
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