

S.A.T.-CATALOG

SAFE, SAFER, S.A.T. SYSTEM





Oxyfuel workstations are already subject to high safety standards to protect people and the environment, but there is always the risk of an undetected leak in the hose. Until now. Messer Cutting Systems is proud to be able to take your safety a big step forward with its new system.

The S.A.T. system eliminates the risk of leaks in the torch's fuel gas supply by automatically stopping the gas supply as soon as a leak occurs. All that is required is an S.A.T. system consisting of torch, nozzles and valve.

On top of this, using an S.A.T. system gives you the effect of a perfectly adjusted flame. There is zero to little need to adjust the flame. In addition, the torches of the S.A.T. system rely on our quick-change system for nozzles. This means that a nozzle can be replaced by hand without tools.

SAFETY ADVANCED TECHNOLOGY

SAFE, SAFER S.A.T.-System

Huge safety advantage

Unnoticed leaks occur particularly frequently at the gas supply hoses. This is due to the fact that during the leak test before commissioning by the user, often only screw connections are checked. In addition, such hoses can be up to 200 meters long in practice. Only very rarely is the entire length of the hose checked for leaks. This is fatal as the hose is the part of the gas supply to the burner that is most susceptible to damage. Furthermore, even if the hoses are carefully checked before commissioning, it is not possible to prevent damage and thus the occurrence of a leak during the work itself. But it is precisely these risks that the S.A.T. system addresses.



Draws attention to leaks



In conventional oxyfuel applications, users do not notice minor leaks in the fuel gas hose, which only increases the risk of escaping gas. Despite leaks in the fuel gas hose, the flame and the working behavior of the torch do not change. The user therefore has no chance of noticing the leakage. When using the new S.A.T. system, the flame of the burner goes out and thus prevents further work despite a leak in the gas supply. The user now knows that he is dealing with a leak and must check his supply line.

Elimination of the danger

The biggest advantage of the S.A.T. system is certainly not that the torch extinguishes in the event of a leak and the user therefore knows that there is a leak, but rather that the complete gas supply from the S.A.T. valve to the torch is automatically stopped immediately. This means that gas can never escape from the leak. Preventing leaks in the workplace is very important for occupational safety, as escaping fuel gas significantly increases the risk of explosion. Particularly in rooms without adequate ventilation, escaping fuel gas can quickly become a fatal cause of accidents. Naturally, this particularly benefits workplaces where there are many options for damaging the hose in the working environment, such as scrap yards. However, workplaces that work in enclosed spaces, such as mines, shipyards and tank builders, must also protect themselves against leaks, as they are particularly susceptible to large accumulations of fuel gas from leaks.

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Legend for connection abbreviations

Abbreviation	Oxygen-Connection	Fuelgas-Connection
DIN	G 1/4" RH	G 3/8" LH
BSP	G 3/8" RH	G 3/8" LH
UNF	9/16" NF RH	9/16" NF LH

S.A.T.-System

The S.A.T.-System consists of three newly developed components: The S.A.T.-Valve, the S.A.T.-compatible hand cutting torch and the nozzles for S.A.T. hand cutting torch.

You do not need anything else to start your journey with S.A.T.-System and discover its breathtaking safety advantages. On the following pages you will also find additional accessories for oxyfuel hand cutting.

The use of heating torches with the S.A.T. valve is also possible in principle. Contact us to find out more about the compatibility of the individual heating torches.

S.A.T. – VALVE

S.A.T. - VALVE

Anti – Leakage - Valve



Type	Connections	Operating pressure	Art.-No.	Cat.-No.
S.A.T. Valve	G3/8" LH	3,5bar	770.71625	042
S.A.T. Valve	9/16" NF LH	3,5bar	770.71624	042
S.A.T. Valve	M16x1,5 LH	3,5bar	770.71626	042

Safety element: NV

Operating pressure (max.):

Acetylene 1,5bar / Hydrogen 3,5bar / Propane, Butane, Methane (natural gas), MAPP 5,0bar

HAND CUTTING TORCH STARCUT 5622 S.A.T.

STARCUT 5622 S.A.T.

For cylindrical nozzles; Cutting oxygen via lever,
Nozzle Quick-change system



Name	Length approx. Torch head angle	Type	Connections	Art.-No.	Cat.-No.
STARCUT 5622 S.A.T.	900mm / 95°	PMY	BSP	716.07949	003
STARCUT 5622 S.A.T.	1200mm / 135°	PMY	DIN	716.07950	003
STARCUT 5622 S.A.T.	1200mm / 135°	A	DIN	716.07951	003
STARCUT 5622 S.A.T.	1200mm / 135°	PMY	BSP	716.07952	003
STARCUT 5622 S.A.T.	1200mm / 135°	A	BSP	716.07954	003
STARCUT 5622 S.A.T.	530mm / 95°	PMY	DIN	716.07955	003
STARCUT 5622 S.A.T.	530mm / 95°	A	DIN	716.07956	003
STARCUT 5622 S.A.T.	530mm / 95°	PMY	BSP	716.07957	003
STARCUT 5622 S.A.T.	530mm / 95°	A	BSP	716.07958	003
STARCUT 5622 S.A.T.	530mm / 95°	A	UNF	716.08028	003
STARCUT 5622 S.A.T.	530mm / 95°	PMY	UNF	716.08089	003

Torch head for our quick-change nozzles for STARCUT 5622 S.A.T.:

- ECOSAT A/PMY nozzles for fuel gas: A/PMY
- Nozzle quick change system, cutting nozzle and heating cap are changed by hand

HAND CUTTING NOZZLES ECO S.A.T.

Cylindrical nozzles for STARCUT 5622 S.A.T.

ECO-S.A.T. A/PMY

Type	Cutting range	Type	Art.-No.	Cat.-No.
ECOSAT A	5 - 25 mm	A	716.16951	007
	25 - 40 mm	A	716.16952	007
	40 - 60 mm	A	716.16953	007
	60 - 100 mm	A	716.16954	007
	100 -200 mm	A	716.16955	007
	200 - 300 mm	A	716.16956	007
Heating cap	5 - 100 mm	A/PMY	716.16550	032
	100 - 300 mm	A/PMY	716.16560	032
ECOSAT PMY	5 - 25 mm	PMY	716.16961	007
	25 - 40 mm	PMY	716.16962	007
	40 - 60 mm	PMY	716.16963	007
	60 - 100 mm	PMY	716.16964	007
	100 -200 mm	PMY	716.16965	007
	200 - 300 mm	PMY	716.16966	007
Heating cap	5 - 100 mm	A/PMY	716.16550	032
	100 - 300 mm	A/PMY	716.16560	032



CYLINDER PRESSURE REGULATOR CONSTANT 200 BAR O2

OXYGEN

single stage



<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
10 bar	G 3/4"	G 1/4", DN 6	716.20100	025
20 bar	G 3/4"	G 1/4", DN 6	716.20101	025
50 bar	G 3/4"	Brazing nipple G 1/4", DN6**	716.20333	026
Union nut G1/4"			700.50030	008
Hose nipple DN 6			700.50050	008

**Brazing nipple included in delivery

OXYGEN

single stage



<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
1,5 bar	G 3/4"	G 1/4", DN 6	716.20104	026
2,5 bar	G 3/4"	G 1/4", DN 6	716.20105	026
10 bar	G 3/4"	G 1/4", DN 6	716.20106	026
Union nut G1/4"			700.50030	008
Hose nipple DN 6			700.50050	008

OXYGEN

single stage



<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
100 bar	G 3/4"	G 1/2", DN 15 **	716.20345	004

*brazing nipple included in delivery

CYLINDER PRESSURE REGULATOR CONSTANT FUEL GAS

Single stage

ACETYLENE

<i>Inlet pressure max.</i>	<i>Working pressure max.</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
25 bar	1,5 bar	Clamp	G 3/8" LH, DN 8	716.20107	025
Union nut G 3/8" LH				700.50040	008
Hose nipple DN 9				471.40090	008



Single stage

PROPANE

<i>Inlet pressure max.</i>	<i>Working pressure max.</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
10 bar	2,5 bar	W 21,80 x 1/14" LH	G 3/8" LH, DN 8	716.20108	025
Union nut G 3/8" LH				700.50040	008
Hose nipple DN 9				471.40090	008



CYLINDER PRESSURE REGULATOR CONSTANT 300 BAR O2

OXYGEN

Single stage



<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
10 bar	W30x2 - Ø 17.3/18.3	G 1/4", DN 6	716.30100	026
20 bar	W30x2 - Ø 17.3/18.3	G 1/4", DN 6	716.30101	026
50 bar	W30x2 - Ø 17.3/18.3	Brazing nipple G 1/4" DN 6 **	716.30102	026
Union nut G 1/4"			700.50030	008
Hose nipple DN 6			700.50050	008
** Brazing nipple with union nut included in delivery				

OXYGEN

Single stage



<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
100 bar	W30x2 - Ø 17.3/18.3	G 1/2", DN 15 **	716.30103	026

** Brazing nipple
with union nut
included in delivery

OXYGEN

single stage, with inlet pressure compensation



<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
2,5 bar	W30x2 - Ø 17.3/18.3	G 1/4", DN 6	716.30120	026
10 bar	W30x2 - Ø 17.3/18.3	G 1/4", DN 6	716.30121	026
Union nut G 1/4"			700.50030	008
Hose nipple DN 6			700.50050	008

OXYGEN

Double stage



<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
1,5bar	W30x2 - Ø 17.3/18.3	G 1/4", DN 6	716.30138	026
2,5bar	W30x2 - Ø 17.3/18.3	G 1/4", DN 6	716.30139	026
10bar	W30x2 - Ø 17.3/18.3	G 1/4", DN 6	716.30140	026
Union nut G1/4"			700.50030	008
Hose nipple DN6			700.50050	008

SAFETY DEVICES

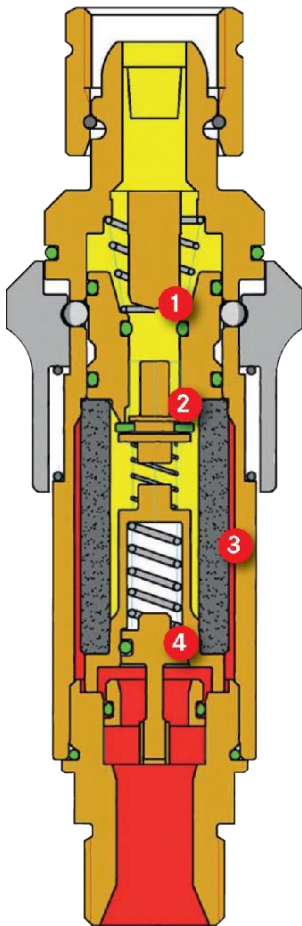
TRUST IN CERTIFIED SAFETY

Safety devices for technical gases give reliable protection against reverse flow of gas and flashbacks for pressure regulators, tapping points of pipeline systems and individual cylinders, hoses, oxyfuel equipment and flame cutting machines as well as gas supply stations. They prevent the entry of air or oxygen into supply lines or individual cylinders and prevent flashbacks and continued gas supply in case of a backfire. Built-in filters give protection against impurities and guarantee long operating and service lives.

Our products conform to the requirements of the international standards DIN EN 561, DIN EN ISO 5175 and ISO 7289. They are certified as "BAM certified under monitoring" and have the necessary world-wide approvals. All safety devices and couplings have been design checked and are subjected to 100 % testing.

By using safety devices, you fulfil the regulatory requirement to use appropriate equipment when working with gases and meet the accident prevention regulations BGV D1.

SAFETY DEVICES FROM MESSER CUTTING SYSTEMS



1 Pressure sensitive gas cut-off system (PV)

Pressure controlled gas cut-off prevents continued gas flow if shock waves arise. The flow of gases can be reinstated manually (Typ:DS only)

2 Gas shut-off valve (NV)

Gas shut-off valve allows the gases to flow only in one direction and reliably prevents a creeping or sudden back-flow of air or oxygen into the distribution system or the individual cylinder..

3 Flame arrestor (FA)

Flame arrestors stop any flame coming from the gas outlet side and reduces the flame temperature to get below the ignition point so that the gas in the inlet area cannot be ignited.

4 Thermal gas cut-off system (TV)

Temperature controlled gas cut-off consists of a spring loaded valve which is held open by a fusible link. If the safety device gets too hot because of a flaschback or backfire, the valve is automatically closed by the melting of the link, thus cutting off the gas flow.

DGN-DK

For the protection of cylinder regulators and tapping points



Gas type	Connections	Operating pressure (max.)	Art.-No.	Cat.-No.
Oxygen	G 1/4" RH	15 bar / 8 m³/h	0.463.347	041
Oxygen	G 3/8" RH	15 bar / 22 m³/h	0.463.348	041
Fuel gas	G 3/8" LH	5,0 bar / 3 m³/h	0.463.346	041

Safety elements: FA, NV, TV
With quick coupling

Fuel gas Operating pressure (max.): Acetylene 1,5 bar, Hydrogen 3,5 bar

DKSG

For protection of working equipment



Gas type	Connections	Operating pressure (max.)	Art.-No.	Cat.-No.
Oxygen	G 1/4" RH	20 bar	0.463.296	041
Oxygen	G 3/8" RH	20 bar	0.463.356	041
Fuel gas	G 3/8" LH	5,0 bar	0.463.295	041

Safety elements: FA, NV
With quick coupling

Fuel gas Operating pressure (max.): Acetylene 1,5 bar, Hydrogen 3,5 bar

DKG

For protection of working equipment



Gas type	Connections	Art.-No.	Cat.-No.
Fuel gas	G 3/8" LH	0.463.305	041
Oxygen	G 1/4"	0.463.306	041
Oxygen	G 3/8"	0.463.358	041
Inert gases	G 1/4"	0.463.307	041
Inert gases	G 3/8"	0.463.359	041

Safety elements: SV
With quick couplings

D1**D4**

Quick coupling pins for working equipment



Gas type	Connections	Art.-No.D1	Art.-No.D4	Cat.-No.
Fuel gas	G 3/8" LH	0.463.299	0.463.432	041
Oxygen	G 1/4"	0.463.300	0.463.430	041
Oxygen	G 3/8"	0.463.363	0.463.431	041
Inert gases	G 1/4"	0.463.301	0.463.433	041
Inert gases	G 3/8"	0.463.364	0.463.434	041

For the protection of cylinder regulators and tapping points

DGN

Gas type	Connections	Operating pressure / flow rate	Art.-No.	Cat.-No.
Oxygen	G 1/4" RH	25 bar / 11 m³/h	0.463.283	041
Oxygen	G 3/8" RH	25 bar / 33 m³/h	0.463.345	041
Fuel gas	G 3/8" LH	5,0 bar / 4 m³/h	0.463.282	041

Safety elements: FA, NV, TV

Fuel gas Operating pressure (max.): Acetylene 1,5 bar, Hydrogen 3,5 bar
Also available with quick couplings (Typ: DGN-DK)



For the protection of cylinder regulators and tapping points

DG 91 N

Gas type	Connections	Operating pressure / flow rate	Art.-No.	Cat.-No.
Oxygen	G 1/4" RH	25 bar / 52 m³/h	0.463.291	041
Oxygen	G 3/8" RH	25 bar / 52 m³/h	0.463.330	041
Oxygen	G 1/2" RH	25 bar / 52 m³/h	0.463.331	041
Fuel gas	G 3/8" LH	5,0 bar / 6 m³/h	0.463.290	041
Fuel gas	G 1/2" LH	5,0 bar / 19 m³/h	0.463.329	041

Safety elements: FA, NV, TV

Fuel gas Operating pressure (max.): Acetylene 1,5 bar, Hydrogen 4,0 bar



For the protection of cylinder regulators and tapping points

DS 1000

Gas type	Connections	Operating pressure / flow rate	Art.-No.	Cat.-No.
Oxygen	G 1/4" RH	15 bar / 8 m³/h	0.463.790	041
Oxygen	G 3/8" RH	15 bar / 27 m³/h	0.463.791	041
Fuel gas	G 3/8" LH	5,0 bar / 3 m³/h	0.463.792	041

Safety elements: FA, NV, TV, PV
PV can be unblocked manually

Fuel gas Operating pressure (max.): Acetylene 1,5 bar, Hydrogen 3,5 bar



For the protection of cylinder regulators and tapping points

DS 2000

Gas type	Connections	Operating pressure / flow rate	Art.-No.	Cat.-No.
Oxygen	G 1/4" RH	15 bar / 16 m³/h	0.463.652	041
Oxygen	G 3/8" RH	15 bar / 42 m³/h	0.463.584	041
Fuel gas	G 3/8" LH	5,0 bar / 6 m³/h	0.463.650	041

Safety elements: FA, NV, TV, PV
PV can be unblocked manually

Fuel gas Operating pressure (max.): Acetylene 1,5 bar, Hydrogen 4,0 bar



FA = Flame arrestors, NV = Non return valve,
TV = Thermal sensitive cut-off PV = pressure sensitive cut-off

HOSES

Oxygen-hose according to DIN EN ISO 3821, color blue



<i>Dimensions</i>	<i>Marking</i>	<i>Torch system</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
DN 6 x 5	Messer	STAR / STARCUT	051.01010	043
DN 8 x 3,5	Messer		0.469.033	000

Sold by the meter without connections

Oxygen-hose according to DIN EN ISO 3821, color blue



<i>Dimensions</i>	<i>Marking</i>	<i>Torch system</i>	<i>Art.-No.</i>	<i>Cat.-No.</i>
DN 9 x 3,5	Messer	STAR / STARCUT	0.462.859	043

Sold by the meter without connections

Hose assembly according to DIN EN 1256

The fixing of oxyfuel hoses was defined with DIN EN 1256: 2008-3.

Quote: DIN EN 1256 Pkt. 4.2.3 „Hose Connections“:

„The hose needs to be connected with a matching hose fixing using a hose connecting nipple, to build a re-producible joint. The use of worm screw collars or other loose connections is prohibited“.

This regulation obligates the user to work with adequate connections, e.g. squeezed cartridges.

Furthermore, DGUV 100-500, chapter 2.26, national accident prevention regulations, do apply: Gas hoses must be prepared in a way, that a slipping off the hose clips is prevented, and that connections and hose fixations meet the requirements of the used gas type.



CREATING SOLUTIONS BEYOND MACHINES

What we stand for

PRODUCT

Messer Cutting Systems is a global supplier of cutting edge technology for the metalworking industry.

AUTOMATION

With over 900 employees worldwide in over 50 countries, we maintain a constant dialogue with our customers to achieve sustainable user-oriented innovation.

DIGITAL

SERVICES

Our portfolio embraces the themes PRODUCT, DIGITAL, SERVICES, AUTOMATION and KNOW-HOW. We will live up to our claim "creating solutions beyond machines" not just with the most modern cutting systems and solutions for oxyfuel technology.

KNOW-HOW

Appropriate services and training, our own software applications as well as the integration of solutions from our technology partners, e. g. in the field of automation, complete the machine to give forward-looking total solutions.

Our know-how combined with our customer-oriented attitude and actions have made us the worldwide partner of choice for innovative total solutions on all aspects of cutting systems for over 120 years.

Messer Cutting Systems India Private Limited

WNo 199/2AB2, 198/2A2A & 198/2A2B
SNMV College Road, Malumichampatti,
Coimbatore - 641 050,
Tamil Nadu, India

Tel : +91 422 6725501

Mail : sales.all@messer-cutting.com

messer-cutting.com

