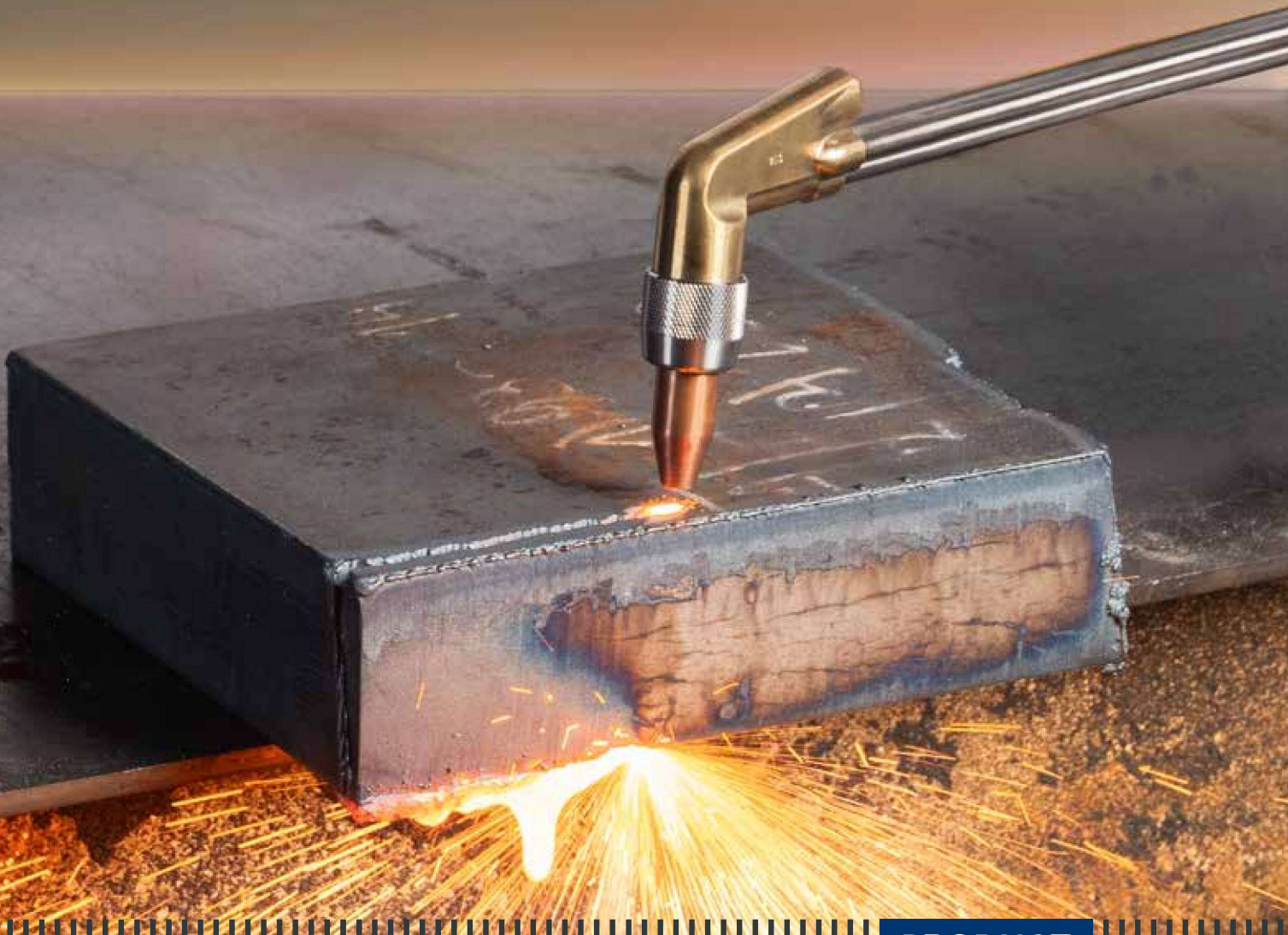


HYCUT

Hydrogen makes oxyfuel technology more cost-effective
and better for the environment and human health



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CYLINDER PRESSURE REGULATOR CONSTANT 200-BAR-H2

HYDROGEN

single stage



<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Kat.-No.</i>
2,5bar	W 21,80 x 1/14" LH	G 3/8" LH, DN 9	716.20403	023
10bar	W 21,80 x 1/14" LH	G 3/8" LH, DN 9	716.20110	023
Union nut G 3/8" LH			700.50040	008
Hose nipple DN 9			471.40090	008

HYDROGEN

single stage, with outlet flowmeter

max. 16 l/min



<i>Max. flowrate.</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Kat.-No.</i>
16l/min	W 21,80 x 1/14" LH	G 3/8" LH, DN 9	716.20115	023
Union nut G 3/8" LH			700.50040	008
Hose nipple DN 9			471.40090	008


HYDROGEN


double stage




<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Kat.-No.</i>
2,5bar	W 21,80 x 1/14" LH	G 3/8" LH, DN 9	716.20117	023
10bar	W 21,80 x 1/14" LH	G 3/8" LH, DN 9	716.20118	023
Union nut G 3/8" LH			700.50040	008
Hose nipple DN 9			471.40090	008

CYLINDER PRESSURE REGULATOR CONSTANT 200-BAR-O2

single stage					OXYGEN	
Max working pressure	Cylinder connections	Hose connections	Art.-No.	Kat.-No.		
10bar	G 3/4"	G 1/4", DN 6	716.20100	025		
20bar	G 3/4"	G 1/4", DN 6	716.20101	025		
50bar	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		
With polymer spring bonnet for outlet pressures up to 20bar						

double stage					OXYGEN	
Max working pressure	Cylinder connections	Hose connections	Art.-No.	Kat.-No.		
1,5bar	G 3/4"	G 1/4", DN 6	716.20104	026		
2,5bar	G 3/4"	G 1/4", DN 6	716.20105	026		
10bar	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		

single stage					OXYGEN
Max working pressure	Cylinder connections	Hose connections	Art.-No.	Kat.-No.	
100bar	G 3/4"	G 1/2", DN 15 **	716.20345	004	
**Brazing nipple included in delivery					

CYLINDER PRESSURE REGULATOR CONSTANT 300-BAR-H2

HYDROGEN

single stage



<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Kat.-No.</i>
16l/min	W30x2LH - Ø 15.2/20.2	G 3/8" LH, DN 9	716.30129	026
Union nut G 3/8" LH			700.50040	008
Hose nipple DN 9			471.40090	008

HYDROGEN

single stage



<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Kat.-No.</i>
10bar	W30x2LH - Ø 15.2/20.2	G 3/8" LH, DN 9	716.30115	026
Union nut G 3/8" LH			700.50040	008
Hose nipple DN 9			471.40090	008


HYDROGEN

double stage




<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Kat.-No.</i>
1,5bar	W30x2LH - Ø 15.2/20.2	G 3/8" LH, DN 9	716.30147	026
2,5bar	W30x2LH - Ø 15.2/20.2	G 3/8" LH, DN 9	716.30148	026
10bar	W30x2LH - Ø 15.2/20.2	G 3/8" LH, DN 9	716.30149	026
Union nut G 3/8" LH			700.50040	008
Hose nipple DN 9			471.40090	008


CYLINDER PRESSURE REGULATOR CONSTANT 300-BAR-O2

				single stage	OXYGEN
<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Kat.-No.</i>	
10bar	W30x2 - Ø 17.3/18.3	G 1/4", DN 6	716.30100	026	
20bar	W30x2 - Ø 17.3/18.3	G 1/4", DN 6	716.30101	026	
50bar	W30x2 - Ø 17.3/18.3	Brazing nipple G 1/4", DN 6 **	716.30102	026	
Union nut G1/4"			700.50030	008	
Hose nipple DN 6			700.50050	008	

** Brazing nipple included in delivery

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

** Brazing nipple included in delivery

				double stage	OXYGEN
<i>Max working pressure</i>	<i>Cylinder connections</i>	<i>Hose connections</i>	<i>Art.-No.</i>	<i>Kat.-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 DN 6			700.50050	008	

SAFETY DEVICES

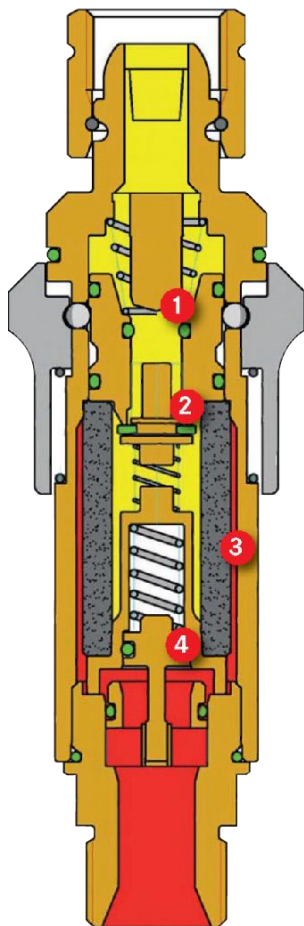
TRUST IN CERTIFIED SAFETY

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 flashback or backfire, the valve is automatically closed by the melting of the link, thus cutting off the gas flow.

For the protection of cylinder regulators and tapping points

DGN

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

Safety elements: FA, NV, TV

Fuel gas Operating pressure (max.): Acetylene 1,5bar, Hydrogen 3,5bar
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.	Kat.-No.
Oxygen	G 1/4" RH	25bar / 52m³/h	0.463.291	041
Oxygen	G 3/8" RH	25bar / 52m³/h	0.463.330	041
Oxygen	G 1/2" RH	25bar / 52m³/h	0.463.331	041
Fuel gas	G 3/8" LH	5,0bar / 6m³/h	0.463.290	041
Fuel gas	G 1/2" LH	5,0bar / 19m³/h	0.463.329	041

Safety elements: FA, NV, TV

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



For the protection of working equipment

GG

Gas type	Connections	Operating pressure	Art.-No.	Kat.-No.
Oxygen	G 1/4" RH	20bar	0.463.790	041
Oxygen	G 3/8" RH	20bar	0.463.791	041
Fuel gas	G 3/8" LH	5,0bar	0.463.792	041

Safety elements: FA, NV,

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



For the protection of cylinder regulators and tapping points

DS 2000

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

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

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



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

DGN-DK

For the protection of cylinder regulators and tapping points



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

Safety elements: FA, NV, TV
With quick coupling

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

DKSG

For the protection of working equipment



Gas type	Connections	Operating pressure (max.)	Art.-No.	Kat.-No.
Oxygen	G 1/4" RH	20bar	0.463.296	041
Oxygen	G 3/8" RH	20bar	0.463.373	041
Fuel gas	G 3/8" LH	5,0bar	0.463.356	041

Safety elements: FA, NV
With quick coupling

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

DKG

For the protection of cylinder regulators and tapping points



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

Safety elements: SV
With quick coupling

Fuel gas Operating pressure (max.): Acetylene 1,5bar, Hydrogen 3,0bar

D1**D4**

Quick coupling pins for working equipment



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

HOSES

All fuel gas-hose according to DIN EN ISO 3821, color red/orange all fuel gases including H₂

<i>Dimensions</i>	<i>Marking</i>	<i>Connections</i>	<i>Art.-No.</i>	<i>Kat.-No.</i>
DN9 sold by meter	Messer	-	716.56300-M	043
DN9 5m	Messer	G3/8"LH	716.56300-05	043
DN9 10m	Messer	G3/8"LH	716.56300-10	043
DN9 15m	Messer	G3/8"LH	716.56300-15	043
DN9 20m	Messer	G3/8"LH	716.56300-20	043



Designed for the transport of all fuel gases, including hydrogen.

Twin hoses according to DIN EN ISO 3821, color red / orange suitable for all fuel gases including H₂ and blue for oxygen

<i>Dimensions</i>	<i>Marking</i>	<i>Connections</i>	<i>Art.-No.</i>	<i>Kat.-No.</i>
ABG DN9 5m O2 DN6 5m	Messer	G3/8"LH G1/4"RH	716.56301-05	043
ABG DN9 10m O2 DN6 10m	Messer	G3/8"LH G1/4"RH	716.56301-10	043
ABG DN9 15m O2 DN6 15m	Messer	G3/8"LH G1/4"RH	716.56301-15	043
ABG DN9 20m O2 DN6 20m	Messer	G3/8"LH G1/4"RH	716.56301-20	043



Hoses for torch system MINITHERM

<i>Dimensions</i>	<i>Gas</i>	<i>Torch System</i>	<i>Art.-No.</i>	<i>Kat.-No.</i>
DN 3,2 x 1,8	Fuel gas / red	MINITHERM	0.140.078	043
DN 3,2 x 1,8	Oxygen / blue	MINITHERM	0.140.079	043



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.

MACHINE CUTTING TORCHES MS 932

MS 932

Three hose machine cutting torch for cylindrical nozzles
Nozzle quick change system



Type	Shaft length	Gas	Art.-No.	Kat.-No.
MS 932 / 110	110mm	H	716.11653	014
MS 932 / 250	250mm	H	716.11649	014

Shaft diameter: 32 mm / Cutting range: up to 300mm

For flame cutting machines of series:
MINISEC, PORTACUT, SECATOR 2, CORTA, STATOSEC, MULTISEC, OMNIMAT,
SICOMAT, CORTINA, SANCUT, COMCUT, EASYTHERM

Typ H for fuel gas: Hydrogen

ADJUSTING VALVES

Accessories for machine cutting torches-



Type	Connections	Art.-No.	Kat.-No.
Heating oxygen	G 1/4", DN 6	718.00500	005
Cutting oxygen (for material up to 100mm)	G 3/8", DN 9	718.00501	005
Fuel gas	G 3/8"LH, DN 9	718.00502	005

Adjusting valves for machine cutting torch MS 932

ACCESSORIES

Optional: for machine cutting torch MS 932
Cutting oxygen supply without pressure loss when cutting more than 100mm



Type	Connections	Art.-No.	Kat.-No.
Ball valve	G 3/8"-DN10-O2	722.44775	100103
NV- safety device GRV 91 UA (FA,NV)	G 1/2"(M) – G3/8" (F)	77005116	043

HAND CUTTING TORCHES STARCUT 5622

For cylindrical nozzles with O-ring sealings, cutting oxygen regulation with spring lever				STARCUT 5622-H
Type	Torch head	Length ca.	Art.-No. Typ H	Kat.-No.
STARCUT 5622 CGA 9/16"RH 9/16"LH	95°	500mm	716.08121	014
STARCUT 5622 BSP G3/8"RH G3/8"LH"	95°	500mm	716.08122	014
STARCUT 5622 NFE M16x1.5 RH M16x1.5 LH	95°	500mm	716.08123	014
Hand cutting torch STARCUT 5622 Typ H for Hydrogen				
Pressure screw M22x1.5			677.13036	008



Torch head for our nozzles for MS 932 :

- HYCUT 9250/9251-H for fuel gas: Hydrogen
- Additional use of machine cutting torches for manual cutting after application on a flame cutting machine
- Nozzle quick change system, cutting nozzle and heating cap are changed by hand
- Optimized stockkeeping by using one nozzle type for machine cutting torches (MS932) and hand torches

MACHINE CUTTING AND HAND CUTTING NOZZLES

Cylindrical nozzles for machine cutting torch MS 932 and hand cutting torch STARCUT 5622				HYCUT 9250-H
Type	Cutting range	Art.-No.	Kat.-No.	
HYCUT 9250-H	5 - 25mm	716.16923	014	
HYCUT 9250-H	25 - 40mm	716.16924	014	
HYCUT 9250-H	40 - 60mm	716.16925	014	
HYCUT 9250-H	60 - 100mm	716.16926	014	
HYCUT 9251-H	100 - 150mm	716.16927	014	
HYCUT 9251-H	150 - 230mm	716.16928	014	
HYCUT 9251-H	230 - 300mm	716.16929	014	
Heating cap 9250	5 - 100mm	716.16920	014	
Heating cap 9251	100 - 300mm	716.16930	014	
Hole piercing nozzle	100 - 150mm	716.16921	014	
Hole piercing heating cap	100 - 150mm	716.16920	014	

HYCUT 9250-H/9251-H nozzles can be used with the hand cutting torch STARCUT 5622-H / STAR 5730-H and the machine cutting torch MS 932-H.

TORCH SYSTEM STAR

HANDLES

Robust, maintenance free and easy to repair



Type	Description	Connections	Art.-Nr.	Kat.-Nr.
STAR 2020	Valve arrangement lateral	Oxygen: G 1/4" Fuel gas: G 3/8" LH	716.06820	024
STAR 2020 MB	Valve arrangement lateral	Oxygen: G 3/8" Fuel gas: G 3/8" LH	716.07230	024
STAR 1010	Valve V-positioned	Oxygen: G 1/4" Fuel gas: G 3/8" LH	716.07725	024
STAR 1010 MB	Valve V-positioned	Oxygen: G 3/8" Fuel gas: G 3/8" LH	On request	024

Length: ca. 230mm, Shaft diameter: 20mm, Weight: ca. 550g

The ergonomic, especially sturdy design of our STAR handles allows easy handling, fatigue-free working and high operation comfort. Self-tensioning radial seals enable fast and safe sealing, the union nut can be easily tightened by hand

WELDING-, BRAZING AND HEATING TIPS Z-H

Central flame outlet, nozzles replaceable



Size	O ₂ -Consumption	Welding range	Art.-No. Tip complete	Art.-No. nozzle	Kat.-No.
1	0,11m ³ /h	0,5 – 1,0mm	716.56001	716.55991	014
2	0,13m ³ /h	1,0 – 2,0mm	716.56002	716.55992	014
3	0,25m ³ /h	2,0 – 4,0mm	716.56003	716.55993	014
4	0,35m ³ /h	4,0 – 6,0mm	716.56004	716.55994	014
5	0,8m ³ /h	6,0 – 9,0mm	716.56005	716.55995	014
6	1m ³ /h	9,0 – 14,0mm	716.56006	716.55996	014
7	1,3m ³ /h	14,0 – 20,0mm	716.56007	716.55997	014
8	1,5m ³ /h	20,0 – 30,0mm	716.56008	716.55998	014
9	2,5m ³ /h	30,0 – 35,0mm	716.56009	716.55999	014
10	3,5m ³ /h	>35,0mm	716.56010	716.56000	014

Tips for welding, brazing and spot heating with hydrogen

BRAZING AND HEATING TIPS F-H

Laminar flame outlet, nozzles replaceable



Size	O ₂ -Consumption	Art.-No. Tip complete.	Art.-No. Nozzle	Kat.-No.
3	0,25m ³ /h	716.56073	716.56063	014
4	0,35m ³ /h	716.56074	716.56064	014
6	0,9m ³ /h	716.56076	716.56066	014
8		716.56078		014

Tips for laminar brazing and heating with hydrogen

Laminar flame outlet, nozzles replaceable

BRAZING AND HEATING TIPS FB-H

Size	O ₂ -Consumption	Art.-No. Tip complete	Art.-No. nozzle	Kat.-No.
5	0,8m³/h	716.56035	716.56025	014
6	1,0m³/h	716.56036	716.56026	014
7	1,3m³/h	716.56037	716.56027	014
8	1,5m³/h	716.56038	716.56028	014
9	2,4m³/h	716.56039	716.56029	014
10	3,3m³/h	716.56040	716.56030	014

Tips for laminar brazing and heating with hydrogen
Especially quiet – around 75dB



For manual flame cutting
Fuel gas: Hydrogen.

STAR CUTTING ATTACHMENT

Type	Nozzle Type	Art.-No.	Kat.-No.
STAR 5730-H	HYCUT 9250/9251-H	716.08086	014



Torch head for our nozzles for MS 932 (Page 12) :

- HYCUT 9250/9251-H for fuel gas: Hydrogen
- Additional use of machine cutting torches for manual cutting after application on a flame cutting machine
- Nozzle quick change system, cutting nozzle and heating cap are changed by hand
- Optimized stockkeeping by using one nozzle type for machine cutting torches (MS932) and hand torches

FLAME STRAIGHTENING EQUIPMENT

Flame straightening is a quick and gentle way to eliminate the transverse-longitudinal shrinkage and angular distortion caused by welding.

Flame straightening is a proven production method in welding companies. The procedure is easy to use. However, the prerequisite is a good qualification of the employees.

HEATING EFFECT DURING FLAME STRAIGHTENING

Local sharply limited heating

Heating should be fast, heat accumulation must be achieved .

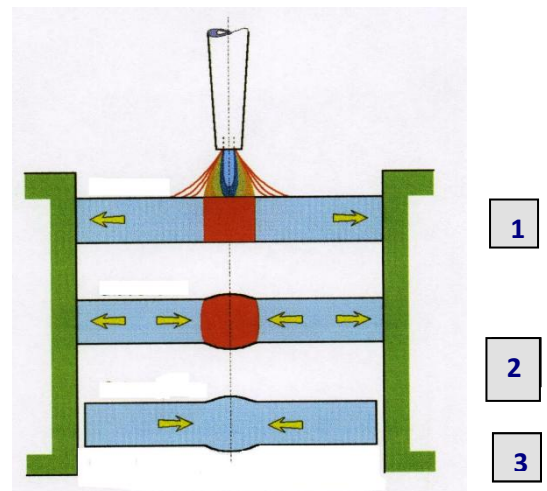
The temperature level depends on the material. The material must be heated up to the plastic range

Steels 550 - 700°C (dark red heat)

Light metals 350 - 400°C (wood chip sample))

Compression of the heated zone due to impeded thermal expansion.

It is important to have an optimal stretching handicap. The cold environment is the most natural stretch disability. Heating for too long (wrong choice of torch; wrong fuel gas) worsen the expansion hindrance. If the impediment of thermal expansion by the cold environment is not sufficient, mechanical aids are useful. Auxiliary should not clamp, but only hold.



As a result compressive stresses build up Plastic deformation occurs

Shrinking, shortening after cooling

The result of flame straightening is only visible when the material has cooled down to room temperature. Normally the cooling takes place in air, but in some cases the cooling speed is increased by cooling with water. This is useful before the next heat profile is set.

FLAME STRAIGHTENING INSERT STAR

For flame straightening
Fuel gas: Hydrogen, Nozzles replaceable



Type	Length.	Size	Art.-No.	Kat.-No.
reversible for 3/2" flames	500mm	4 – 6mm	716.08090	014
reversible for 3/2" flames	1000mm	4 – 6mm	716.08091	014
for 3 flames	500mm	4 – 6mm	716.08092	014
for 3 flames	1000mm	4 – 6mm	716.08093	014

TORCH SYSTEM STARLET

Handle shells removable, maintenance-free, easy to repair

HANDLES

Type	Valve position	Connections	Art.-No	.Kat.-No.
STARLET 1302 ME	Valve arrangement V-shaped	Oxygen: G1/4" Fuel gas: G3/8"LH	716.06109	024
STARLET 1302 MB	Valve arrangement V-shaped	Oxygen: G3/8" Fuel gas: G3/8"LH	716.05976	024
STARLET 2221 ME	Valve arrangement lateral	Oxygen: G1/4" Fuel gas : G3/8"LH	716.06111	024
STARLET 2221 MB	Valve arrangement lateral	Oxygen: G3/8" Fuel gas : G3/8"LH	716.07120	024



Length: approx. 210mm
Shaft diameter: 15mm
Weight: approx. 400g

The ergonomic design of the STARLET handles offers easy handling, fatigue-free working and a high level of operating comfort. Large cross-sections allow the handle to be used in conjunction with high-performance heating inserts and ensure a high level of re-ignition safety. The robust, solid aluminium construction ensures high impact resistance and a long service life.

Flame outlet point-shaped, interchangeable nozzles

BRAZING- AND HEATING TIPS Z-H

Size	O ₂ -Consumption	Welding range	Art.-No. Insert cpl..	Art.-No. Heating nozzle	Kat.-No.
1	0,11m³/h	0,5 – 1,0mm	716.70031	716.55991	014
2	0,13m³/h	1,0 – 2,0mm	716.70032	716.55992	014
3	0,25m³/h	2,0 – 4,0mm	716.70033	716.55993	014
4	0,35m³/h	4,0 – 6,0mm	716.70034	716.55994	014
5	0,8m³/h	6,0 – 9,0mm	716.70035	716.55995	014
6	1m³/h	9,0 – 14,0mm	716.70036	716.55996	014
7	1,3m³/h	14,0 – 20,0mm	716.70037	716.55997	014
8	1,5m³/h	20,0 – 30,0mm	716.70038	716.55998	014

Inserts for spot brazing, welding and heating with hydrogen



Flame outlet laminar, interchangeable nozzles

BRAZING AND HEATING TIPS F-H

Size	O ₂ -Consumption	Art.-No. Insert cpl..	Art.-No. Heating nozzle	Kat.-No.
3	0,25m³/h	716.70051	716.56063	014
4	0,35m³/h	716.70052	716.56064	014
6	0,9m³/h	716.70053	716.56066	014
8		716.70054	716.56072	014

Inserts for laminar brazing, welding and heating with hydrogen



BRAZING AND HEATING TIPS FB-H

Flame outlet laminar, interchangeable nozzles



<i>Size</i>	<i>O₂-Consumption</i>	<i>Art.-No. Insert cpl..</i>	<i>Art.-No. Heating nozzle</i>	<i>Kat.-No.</i>
5	0,8m³/h	716.70045	716.56025	014
6	1,0m³/h	716.70046	716.56026	014
7	1,3m³/h	716.70047	716.56027	014
8	1,5m³/h	716.70048	716.56028	014

Inserts for laminar brazing, welding and heating with hydrogen
Extremely quiet

TORCH SYSTEM MINITHERM

Small handle with high flow efficiency, for welding, brazing, heating and cutting

HANDLES

Type	Art.-No.	Kat.-No.
MINITHERM handle With hose connections 3,2mm	716.06109	024
MINITHERM handle With hose connections 3,2mm + hoses 3m	716.06111	024
MINITHERM handle With hose connections 3,2mm + hoses 5m	716.07753	024



Length: 120mm (without hose connection), shaft diameter: 10mm, weight approx. 90g (without hoses)

The MINITHERM small handle provides the basis for particularly difficult and sensitive applications when using the oxyfuel flame constantly, in extremely small areas, and in places that are not accessible with conventional torches.

Needle inserts straight

**MICRO-NEEDLE INSERT
G-H**

Size	O ₂ -Consumption	O ₂ -Pressure	Injector	Art.-No.	Kat.-No.
1	9-15l/h	0,5-1,5bar	716.50811	716.05795	004
2	9-15l/h	0,5-1,5bar	716.50811	716.05796	004
3	9-21l/h	0,5-2,0bar	716.50811	716.05797	004
4	9-24l/h	0,5-2,0bar	716.50811	716.05798	004

Inserts are supplied without Injector



Injector for needle inserts G-H

INJECTOR

Size	Art.-No.	Kat.-No.
000	716.50811	004



MICRO-INSERTS MG-AH

Small curved tips for hydrogen / acetylene



Size	O ₂ -Consumption	O ₂ -Pressure	Injector	Art.-No.	Kat.-No.
2	6 -9l/h	0,2-0,5bar	716.50813	716.05783	004
3	9-15l/h	0,5-1,5bar	716.50813	716.05784	004
4	32-39l/h	0,5-0,8bar	716.50814	716.05785	004
5	39-43l/h	0,8-1,0bar	716.50814	716.05786	004
6	43-54l/h	1,0-1,5bar	716.50814	716.05787	004
7	54-76l/h	1,5-2,5bar	716.50814	716.05788	004

Inserts are supplied without injector

INJECTOR

Injector for Micro – inserts MG-AH



Size	Art.-No.	Kat.-No.
000	716.50813	004
0	716.50814	004

Choose injector according to the table of the inserts

B3-AHBrazing-, Heating, Welding insert
With interchangeable single nozzles

Type	O ₂ -Consumption	O ₂ -Pressure	Length	Art.-No.	Kat.-No.
B3-AH	1400l/h	1,0 – 3,0bar	311mm	716.04348	024

**FORKED TORCH
Z-AH**

For heating and brazing, with central flame outlet



Size	Length	Nozzle spacing	Art.-No.	Kat.-No.
Z-AH 0	ca. 210mm	30mm	716.50464	039
Z-AH 1	ca. 210mm	30mm	716.50465	039
Z-AH 2	ca. 210mm	30mm	716.02560	039
Z-AH 3	ca. 210mm	30mm	716.50466	039

Forked torch type Z-AH for heating and brazing with hydrogen or acetylene

For heating, brazing and welding with laminar flame outlet, interchangeable nozzles

FKZ-AH

Size	O ₂ -Consumption	Art.-No.	Kat.-No.
FKZ 1	210-350l/h	716.50808	024
FKZ 2	210-420l/h	716.50809	024
FK 3	270-540l/h	716.50810	039

Inserts MINITHERM FK/FKZ-AH for heating, brazing and welding with hydrogen or acetylene



For heating and brazing with laminar flame outlet, interchangeable nozzles

**FORKED TORCH
FKZ-AH**

Size	O ₂ -Consumption	Art.-No.	Kat.-No.
FKZ 1	420-700l/h	716.50820	039
FKZ 2	550-840l/h	716.50821	039

Forked torch MINITHERM FKZ-AH for heating and brazing with hydrogen or acetylene

Length approx. 210mm, weight approx. 130g, nozzle spacing: 30mm



Heating nozzle for inserts FKZ/FK-AH

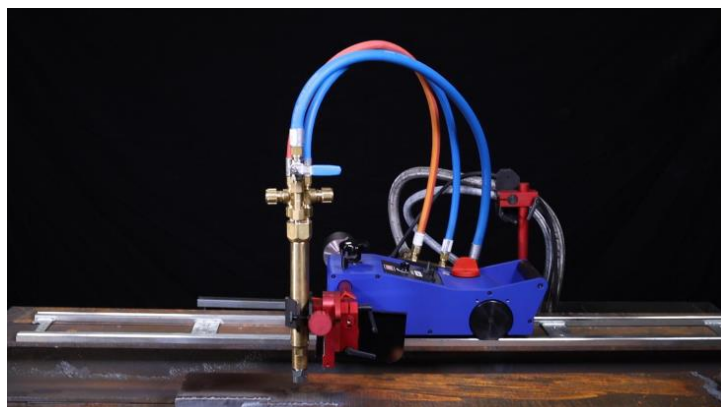
**HEATING NOZZLE
FKZ / FK-AH**

Size	Art.-No.	Kat.-No.
FKZ 1	716.50798	039
FKZ 2	716.50799	039
FK 3	716.03008	039



PORTABLE CUTTING MACHINE SECATOR 2

Description	Drive	Connected Volatge	Speed range	Cutting thickness	Weight
With oxyfuel torch	Condenser induction motor	110/230V ; 50/60Hz	0-1500 mm/min	3-300mm	13.8kg



SECATOR 2 WITH EU PLUG FOR HYDROGEN

Description	Art.-No.	Kat.-No.
With one cutting torch MS 932-H for cylindrical nozzles	716.58153	011

Scope of delivery: Basic machine with machine cutting torch, torch holder, flashback arrestors, adjusting valves, nozzles up to 100mm, counterweight, geared rack, heat protection shield, cable anchor. FOR THE H2-version of Secator 2 are no hoses and gas manifold system included since you connect the hoses directly to the torch. WITHOUT guide rail.

SECATOR 2 WITH UK PLUG FOR HYDROGEN

Description	Art.-No.	Kat.-No.
With one cutting torch MS932for cylindrical nozzles	716.58154	011

Scope of delivery: Basic machine with machine cutting torch, torch holder, flashback arrestors, adjusting valves, nozzles up to 100mm, counterweight, geared rack, heat protection shield, cable anchor. FOR THE H2-version of Secator 2 are no hoses and gas manifold system included since you connect the hoses directly to the torch. WITHOUT guide rail.

ACCESSOIRES SECATOR 2

Description	Art.-No.	Kat.-No.
Guide rail 1800mm	716.58004	011
Radius bar for circular cuts Ø 240 – 1000mm	716.58007	011

PORTABLE CUTTING MACHINE PORTACUT

Description	Drive	Connected Volatge	Speed range	Cutting thickness	Weight
With oxyfuel torch	Condenser induction motor	230V ; 50/60Hz	50-800 mm/min	3-300mm	9.3kg



PORTACUT WITH EU-PLUG FOR HYDROGEN

Description	Art.-No.	Kat.-No.
With one cutting torch MSZ 932-H for cylindrical nozzles	716.51785	006

Scope of delivery: Basic machine with machine cutting torch, torch holder, flashback arrestors, adjusting valves, nozzles up to 100mm, counterweight, geared rack, heat protection shield. FOR THE H2-version of Portacut are no hoses and gas manifold system included since you connect the hoses directly to the torch.
WITHOUT guide rail.

ACCESSOIRES PORTACUT

Description	Art.-No	Kat.-No.
Guide rail 1200mm	716.51790	006
Guide rail 1800mm	716.52018	006
Radius bar for circular cuts Ø 30 – 2400mm	716.51793	006





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.

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